



SEQUENCE LISTING

<110> INNOGENETICS N.V.

<120> New sequences of hepatitis C virus genotypes and their use as prophylactic, therapeutic and diagnostic agents.

<130> 2551-106

<140> US 09/851,138

<141> 2001-05-09

<150> EP 94870166.9

<151> 1994-10-21

<150> EP 95870076.7

<151> 1995-06-28

<160> 302

<170> PatentIn version 3.1

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<212> DNA

<213> hepatitis C virus

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 aggcgacagc ctatcccca ggctcgycgg yccgagggca ggtcctgggc tcagcccggg 240
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20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Xaa Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Xaa Arg Xaa Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro
100 105

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gtgtatcatg tcaccaacga ctgttccaac tcgagcatca tctatgagat ggacggtatg 180

atcatgcact acccaggggtg cgtgccctgc gttcgggagg ataaccatct ccgctgctgg 240

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cgtcacgtcg acttgcttgt tgggggnncc acgttctgtt ccgctatgta cgtgggrgac	360
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Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Xaa Thr Ala
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His Glu Val Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Asp Gly Met Ile Met His Tyr
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asp Asn His Leu Arg Cys Trp
65 70 75 80

Met Ala Leu Thr Pro Thr Leu Ala Val Lys Xaa Ala Ser Val Pro Thr
85 90 95

Xaa Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Xaa Xaa Thr Phe
100 105 110

Cys Ser Ala Met Tyr Val Xaa Asp Leu Cys Gly Ser Val Phe Leu Ala
115 120 125

Gly Gln Leu Phe Thr Phe Ser Pro Arg Met His His Thr Thr Gln Glu
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Cys Asn Cys Ser Ile
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 20 25 30

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 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Asp Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Gln Ser Asp Gly Xaa Xaa Trp Ala Gln Pro Gly
 65 70 75 80

His Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro
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 gtatatcatc tcaccaatga ctgttccaac tcgagcatca tctatgagat gagtggtatg 180
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 cgccatgtcg acttgctggg tgggacagcc gcgtttcgtt ccgctatgta cgtggggggac 360
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Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
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Ile Phe Leu Leu Ala Phe Leu Ser Cys Leu Thr Val Pro Thr Thr Ala
20 25 30

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Ser Gly Met Ile Leu His Ala
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp
65 70 75 80

Met Xaa Leu Thr Pro Thr Leu Ala Val Lys Asp Ala Asn Val Pro Thr
85 90 95

Ala Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Thr Ala Ala Phe
100 105 110

Arg Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val
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Gly Gln Leu Phe Thr Phe Ser Pro Arg Leu Tyr His Thr Thr Gln Glu
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Cys Asn Cys Ser Ile
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Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
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Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45
Ala Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
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Ile Pro Lys Glu Arg Arg Pro Glu Gly Arg
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ggccccaggt tgggtgtgcg cgcgacgagg aagacttccg agcggtcgca acctcgcgga	180
aggcgacagc ctatcccca ggctcgccga cccgagggca ggtcctgggc tcagcctggg	240
tacccatggc ccctctatgc taacgagggc tgcggatggg cgggatggct cctgtcccct	300
cgcggtctcc gtcctagctg gggccccaat gacccccgac gtagatcacg caatttggg	360
aaggtcatcg ataccctaac gtgtggcttc gccgatctca tggggtacat tccgctcgtc	420
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ggcgtgatnn nnnnnnnnn naaccttcn gggtgtcttt tnnctatctt cctcttggcn	540
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cttcacacgc ctgggtgngt gccctgcata cgggaaggca atatctcccg ttgctgggta	720
ccgctcacco ccacgctcgc agcgcggtac gcgaacgctc ccatcgatga ggtgcggcgt	780
cacgtcgacc tcctcgtagg ggcagccgtg ttctgctcag ccatgtacat tggggacctt	840
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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala

35	40	45															
Thr	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro		
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Ile	Pro	Lys	Ala	Arg	Arg	Pro	Glu	Gly	Arg	Ser	Trp	Ala	Gln	Pro	Gly		
65					70					75					80		
Tyr	Pro	Trp	Pro	Leu	Tyr	Ala	Asn	Glu	Gly	Cys	Gly	Trp	Ala	Gly	Trp		
				85					90					95			
Leu	Leu	Ser	Pro	Arg	Gly	Ser	Arg	Pro	Ser	Trp	Gly	Pro	Asn	Asp	Pro		
			100					105					110				
Arg	Arg	Arg	Ser	Arg	Asn	Leu	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys		
			115				120					125					
Gly	Phe	Ala	Asp	Leu	Met	Gly	Tyr	Ile	Pro	Leu	Val	Gly	Ala	Pro	Leu		
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Phe	Leu	Leu	Xaa	Leu	Leu	Ser	Cys	Leu	Thr	Val	Pro	Thr	Ser	Ala	Tyr		
			180					185					190				
Glu	Val	His	Ser	Thr	Thr	Asp	Gly	Tyr	His	Val	Thr	Asn	Asp	Cys	Ser		
	195						200					205					
Asn	Gly	Ser	Ile	Val	Tyr	Glu	Ala	Lys	Asp	Ile	Ile	Leu	His	Thr	Pro		
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Gly	Xaa	Val	Pro	Cys	Ile	Arg	Glu	Gly	Asn	Ile	Ser	Arg	Cys	Trp	Val		
225					230				235						240		
Pro	Leu	Thr	Pro	Thr	Leu	Ala	Ala	Arg	Ile	Ala	Asn	Ala	Pro	Ile	Asp		
				245					250				255				
Glu	Val	Arg	Arg	His	Val	Asp	Leu	Leu	Val	Gly	Ala	Ala	Val	Phe	Cys		
			260				265						270				

Ser Ala Met Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val Gly
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Gln Leu Phe Thr Phe Thr Ser Arg Arg His Trp Thr Val Gln Asp Cys
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Asn Cys Ser Ile Tyr Ser Gly His Ile Thr Gly His Xaa Xaa Xaa
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 ggccccagat tgggtgtgag cgcgacgaga aagacttctg aacgggtcca gccacgtgga 180
 aggcgccagc ccatccctaa agatcggnng gccactggca ggtcctgggg acgtccagga 240
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20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Xaa Ala Thr Gly Arg Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly
100 105

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gggaacctcc ctggttgctc cttttctatc ttctngttgg ctcttctgtc ttgtgtcacc      180

gtgcctgtct ctgncgttga ggtcaaaaat accagtcagg cctatatggc aaccaacgac      240

tgctccaaca acagcatcgt atggcaattg gnggacgcgg tgcttcatgt tcctggatgt      300

gtcccctgcg agaatagctc cggtcgggttc cactgttgga tcccgatctc gcccaacata      360

gccgtgagca aacctggtgc tctcaccaag ggactgcggg cacgcattga tgccgtcgtg      420

atgtccgcca ccctctgctc tgccctgtac gtgggagatg tgtgcggcgc agtgatgata      480

gctgcacagg ctttcatcgt ggcaccgaag cgccattact tcgtccagga atgcaattgc      540

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 35 40 45

Ser Ile Phe Xaa Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser
 50 55 60

Xaa Val Glu Val Lys Asn Thr Ser Gln Ala Tyr Met Ala Thr Asn Asp
 65 70 75 80

Cys Ser Asn Asn Ser Ile Val Trp Gln Leu Xaa Asp Ala Val Leu His
 85 90 95

Val Pro Gly Cys Val Pro Cys Glu Asn Ser Ser Gly Arg Phe His Cys
100 105 110

Trp Ile Pro Ile Ser Pro Asn Ile Ala Val Ser Lys Pro Gly Ala Leu
115 120 125

Thr Lys Gly Leu Arg Ala Arg Ile Asp Ala Val Val Met Ser Ala Thr
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile
145 150 155 160

Ala Ala Gln Ala Phe Ile Val Ala Pro Lys Arg His Tyr Phe Val Gln
165 170 175

Glu Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

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aggcgcacag ccatcccaaa agatcggcgc gccactggca agtcctgggg acgtccagga 240
tacccttggc ccctgtacgg gaacgagggc ctcggctggg cagggtggct cctgtcccc 300
cggggctctc gccctcgtg gggcccaaac gacccccggc acaggtcacg caacttgggt 360

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gggataaatt atgcaacagg gaacttgccc gggtgctcct tttctatctt cttgctggct 540
ctcttgtctt gtatcacctg gcccggtgtct gccatacagg ttaagaacaa cagccacttc 600
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Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1           5           10           15

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Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20           25           30

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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala

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35	40	45															
Pro	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro		
50						55					60						
Ile	Pro	Lys	Asp	Arg	Arg	Ala	Thr	Gly	Lys	Ser	Trp	Gly	Arg	Pro	Gly		
65					70					75					80		
Tyr	Pro	Trp	Pro	Leu	Tyr	Gly	Asn	Glu	Gly	Leu	Gly	Trp	Ala	Gly	Trp		
				85					90					95			
Leu	Leu	Ser	Pro	Arg	Gly	Ser	Arg	Pro	Ser	Trp	Gly	Pro	Asn	Asp	Pro		
			100					105					110				
Arg	His	Arg	Ser	Arg	Asn	Leu	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys		
	115						120				125						
Gly	Phe	Xaa	Asp	Leu	Met	Gly	Tyr	Ile	Pro	Val	Val	Gly	Ala	Pro	Val		
130						135					140						
Gly	Gly	Val	Ala	Arg	Ala	Leu	Ala	His	Gly	Val	Arg	Val	Leu	Glu	Asp		
145					150					155					160		
Gly	Ile	Asn	Tyr	Ala	Thr	Gly	Asn	Leu	Pro	Gly	Cys	Ser	Phe	Ser	Ile		
				165					170					175			
Phe	Leu	Leu	Ala	Leu	Leu	Ser	Cys	Ile	Thr	Val	Pro	Val	Ser	Ala	Ile		
			180					185					190				
Gln	Val	Lys	Asn	Asn	Ser	His	Phe	Tyr	Met	Ala	Thr	Asn	Asp	Cys	Ala		
		195					200					205					
Asn	Asp	Ser	Ile	Val	Trp	Gln	Leu	Arg	Asp	Ala	Val	Leu	His	Val	Pro		
210						215					220						
Gly	Cys	Val	Pro	Cys	Glu	Arg	Ser	Gly	Asn	Arg	Thr	Phe	Cys	Trp	Thr		
225					230					235					240		
Ala	Val	Ser	Pro	Asn	Val	Ala	Val	Ser	Arg	Pro	Gly	Ala	Leu	Thr	Arg		
				245					250					255			
Gly	Leu	Arg	Ala	His	Ile	Asp	Thr	Ile	Val	Met	Ser	Ala	Thr	Leu	Cys		
			260					265					270				

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Ile Ala Ala
 275 280 285

Gln Val Ala Val Val Ser Pro Gln Tyr His Thr Phe Val Gln Glu Cys
 290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa
 305 310 315

<210> 19
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 19
 gacggggtaa attatgcaac agggaatctg cctgggttgct ctttctctat cttcttggtg 60
 gctcttctgt cttgtgtcac cgtgcctgtc tctgccgtgc aggttaagaa caccagtacc 120
 atgtacatgg caaccaatga ctgttccaac aacagcatca tctggcaaatt gcagggcgcg 180
 gtgcttcatg ttcttggtatg tgtcccgtgt gagttgcagg gcaataagtc ccggtgctgg 240
 ataccggtca ctcccaacgt ggctgtgaac cagcccggcg ccctcactag gggcttgctgg 300
 acgcacattg acaccatcgt gatggtcgct acgctctgtt ctgcactcta catcggggac 360
 gtgtgtggcg cggatgatgat agctgctcag gttgtcattg tctcgccgca acatcacaac 420
 ttttcccagg attgcaattg ttccatc 447

<210> 20
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<400> 20

Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
 1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala

20	25	30
Val Gln Val Lys Asn Thr Ser Thr Met Tyr Met Ala Thr Asn Asp Cys		
35	40	45
Ser Asn Asn Ser Ile Ile Trp Gln Met Gln Gly Ala Val Leu His Val		
50	55	60
Pro Gly Cys Val Pro Cys Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp		
65	70	75
Ile Pro Val Thr Pro Asn Val Ala Val Asn Gln Pro Gly Ala Leu Thr		
85	90	95
Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Met Val Ala Thr Leu		
100	105	110
Cys Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Ala Val Met Ile Ala		
115	120	125
Ala Gln Val Val Ile Val Ser Pro Gln His His Asn Phe Ser Gln Asp		
130	135	140
Cys Asn Cys Ser Ile		
145		

<210> 21
 <211> 310
 <212> DNA
 <213> hepatitis C virus

<400> 21
 atgagcacia atcctaaacc tcaaagaaaa accaaaagaa acactaaccg ccgcccacag 60
 gacgttaagt tcccgggagg tggccagatc gttggcggag tatacttggt gccgcgcagg 120
 ggcccccggt tgggtgtgag cgcgacgagg aaaacttccg aacgggtccca gccacgtggg 180
 aggcgccagc ccattccctaa agatcggcgc tccactggca aatcctgggg acgtccagga 240
 tacccttggc ccctgtatgg gaacgagggc cttggttggg caggatggct cttgtcccct 300
 cgaggctctc 310

<210> 22
 <211> 48
 <212> PRT
 <213> hepatitis C virus

<400> 22

Met	Ser	Thr	Asn	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Asn
1				5					10					15	

Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Arg	Ser	Leu	Ala
			20					25					30		

Glu	Tyr	Thr	Cys	Ala	Arg	Arg	Gly	Lys	Leu	Arg	Arg	Ser	Ser	Met	Gly
		35					40					45			

<210> 23
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 23

gacgggataa actacgcaac aggggaatctg cccggttgct ccttttctat cttcttgctg	60
gccttgctat cctgtctcac tgtgccggcg tccgctgtgc aggtcaagaa caccagccac	120
tcttatatgg tgaccaatga ttgctcaaac agcagcattg tctggcagct taaggatgct	180
gtgcttcacg tccctggatg tgttccatgt gagaggcacc aaaatcagtc tcgctgctgg	240
atacctgtga cacccaatgt ggccgtgagc caacctggcg cgctcaccag gggtttgcg	300
acgcacattg acaccatcgt tgcgtctgct accgtctgct cagctttgta tgtgggcgac	360
ttctgcggcg cagtgatgtt ggtctctcaa tttttcatga tctccctca gcaccacatc	420
ttcgtccagg attgcaactg ctcgata	447

<210> 24
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<400> 24

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Val Gln Val Lys Asn Thr Ser His Ser Tyr Met Val Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Val Trp Gln Leu Lys Asp Ala Val Leu His Val
50 55 60

Pro Gly Cys Val Pro Cys Glu Arg His Gln Asn Gln Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Thr Pro Asn Val Ala Val Ser Gln Pro Gly Ala Leu Thr
85 90 95

Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Ala Ser Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Phe Cys Gly Ala Val Met Leu Val
115 120 125

Ser Gln Phe Phe Met Ile Ser Pro Gln His His Ile Phe Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 25

<211> 356

<212> DNA

<213> hepatitis C virus

<400> 25

gacgggataa actatgcaac aggggaacctg cctgggttgct ccttttctat cttcttactg

60

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gccctgcttt cttgcatcac cgtgccggtc tctgccgtgc aagttgcgaa ccgcagtggg 120
tcttacatgg tgaccaatga ttgctcgaac agcagcatcg tttggcagct cgaggaggcc 180
gtccttcacg tccctggatg tgttccctgt gagtggaagg acaacacctc ccgctgctgg 240
ataccggtca cccctaacat cgctgtgagc caacctggcg cgcttaccaa gggcctgcgg 300
acacatattg acatcattgt cgcgtccgcc acgttctgct ctgccttgta tgtggg 356

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<210> 26
<211> 118
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (95)..(95)
<223> Xaa represents any amino acid

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<400> 26

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Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1           5           10           15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Ala
          20           25           30

Val Gln Val Ala Asn Arg Ser Gly Ser Tyr Met Val Thr Asn Asp Cys
          35           40           45

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Glu Ala Val Leu His Val
          50           55           60

Pro Gly Cys Val Pro Cys Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp
65           70           75           80

Ile Pro Val Thr Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Xaa Thr
          85           90           95

Lys Gly Leu Arg Thr His Ile Asp Ile Ile Val Ala Ser Ala Thr Phe
          100          105          110

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Cys Ser Ala Leu Tyr Val
115

<210> 27
<211> 310
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (283)..(284)
<223> n represents any nucleotide

<400> 27
atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg cgcgcccatg 60
gacgttaagt tcccgggtgg tggccagatc gttggcggag tttacttggt gccgcgcagg 120
ggccccaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180
agacgccaac ctatcccaa ggcgcgtcga tccgagggaa ggtcctgggc acagccagga 240
tatccatggc ctctttacgg taatgagggg tgcgggtggg cannatggct cttgtcccc 300
cgcggttctc 310

<210> 28
<211> 117
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (95)..(95)
<223> Xaa represents any amino acid

<400> 28

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

20

25

30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
 100 105 110

Arg Arg Arg Ser Arg
 115

<210> 29
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 29
 gacgggatca attttgcaac agggaaacctc cccggttgct ccttttctat cttcctcttg 60
 gcactcctct cgtgcctgac tgtccccgct tcggccatca actatcgcaa tgtctcgggc 120
 atttactatg tcaccaatga ttgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180
 atcttgacacc tcccaggttg cgtgccctgc gtgagagagg ggaatcagtc acgttgctgg 240
 gtagccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg 300
 agtcatgtgg acttgatggg gggggccgcc actgtttgtt cagcccttta catcggggat 360
 ttrtggtggyg gcttgttcct agtcggtcag atgtttctct tccgaccaag gcgccactgg 420
 actactcaag attgcaattg ttccatc 447

<210> 30
 <211> 149

<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (121)..(121)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (123)..(123)
<223> Xaa represents any amino acid

<400> 30

Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Ile Asn Tyr Arg Asn Val Ser Gly Ile Tyr Tyr Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Xaa Cys Xaa Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 31
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 31
gacgggatca attatgcaac aggggaacctt cccgggttgc ttttttctat ctctctcttg 60
gcactctctt cgtgcctgac tgttcccgc tgggccatta actaccgcaa cacctcgggc 120
atctaccacg tcaccaatga ctgcccgaac tcgagcatag tttatgaggc cgaccaccac 180
atcttgacc ttccagggtg cgtgccctgc gtgagaactg ggaatcagtc acgttgctgg 240
gtggccctta ctctaccgt cgcagcgcca tacatcggcg caccgcttga gtctctgcgg 300
agtcattgtg atctgatggt gggggctgcc actgtttgct cagcccttta catcggggat 360
ttgtgtggcg gcttgttctt ggttggtcag atgttttctt tccgaccacg acgccactgg 420
actgccagg attgcaattg ttctatc 447

<210> 32
<211> 149
<212> PRT
<213> hepatitis C virus

<400> 32

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Ala Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 33
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 33
gacgggatta attatgcaac aggggaatctt cccggttgct ctttttctat cttcctcttg 60
gcatttctct cgtgcctgac tgtccccgct tcggccatta actaccacaa cacctcgggc 120
atctatcata tcaccaacga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180
atcttgcatc tcccaggttg cgtgccctgc gtgagagtgg ggaatcagtc gagttgctgg 240
gtggccctta cccctacat cgcagcgcca tacatcggcg caccgcttga gtccttgcg 300
agtcagtgg atctgatggg gggggcgggc actgtctgtt cagcccttta catcggggat 360
ttgtgtggcg gtgcgttctt gggttggtcag atgttctctt tccgaccacg gcgcactgg 420
accaccaag attgcaactg ctccatc 447

<210> 34
<211> 149
<212> PRT

<213> hepatitis C virus

<400> 34

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Ser Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Ile Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 35

<211> 447

<212> DNA

<213> hepatitis C virus

<400> 35

gacgggatca attatgcaac aggggaatatt cccggttgct cyttttctat cttccttytg	60
gcatttctct cgtgtctgac tgtccccgct tgggccacta actatcgcaa cgtctcgggc	120
atctaccatg tcaccaatga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac	180
atcttagcac ttccaggttg cgtgccctgc gtgagagtgg ggaaccagtc acgctgctgg	240
gtggccctta cccctaccgt cgcagcgcca tacaccgagg cgccgcttga gtcctgcgg	300
agtcagtggg atctgatggg gggagctgcc actgtttgtt cagcccttta catcggggag	360
ttgtgtggcg gcttgttctt ggttggtcag atgttctctt tycagcctcg gcgccactgg	420
actaccagg attgcaattg ttccatc	447

<210> 36
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (14)..(14)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (20)..(20)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (120)..(120)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (134)..(134)
 <223> Xaa represents any amino acid

<400> 36

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser

1	5	10	15
Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala	20	25	30
Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys	35	40	45
Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu	50	55	60
Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp	65	70	80
Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu	85	90	95
Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val	100	105	110
Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val	115	120	125
Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp	130	135	140
Cys Asn Cys Ser Ile	145		

<210> 37
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 37	
gacgggatta attatgcaac agggaayctc cccggttgct ctttttctat cttcctcttg	60
gcacttctct cgtgcctgac tgtccccgct tcggccacca actaccgcaa tgtctcgggc	120
attaccatg tcaccaatga ctgcccgaat tcaagcatag tgtttgaggc cgaccatcac	180
atcttgacc ttccaggatg cgtgccctgc gtgaaagagg gaaatcattc acgctgctgg	240

gtggccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg 300
 agtcatgtgg atgtgatggg gggggctgcc actgtttgtt cagcccttta catcggggat 360
 ctgtgcggtg gcttgttcct ggttggtcag atgttctctt tccgaccacg gcgcactgg 420
 actaccagg aatgcaattg ttccatc 447

<210> 38
 <211> 149
 <212> PRT
 <213> hepatitis C virus
 <220>
 <221> MISC_FEATURE
 <222> (9)..(9)
 <223> Xaa represents any amino acid

<400> 38

Asp Gly Ile Asn Tyr Ala Thr Gly Xaa Leu Pro Gly Cys Ser Phe Ser
 1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
 20 25 30

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
 35 40 45

Pro Asn Ser Ser Ile Val Phe Glu Ala Asp His His Ile Leu His Leu
 50 55 60

Pro Gly Cys Val Pro Cys Val Lys Glu Gly Asn His Ser Arg Cys Trp
 65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
 85 90 95

Glu Ser Leu Arg Ser His Val Asp Val Met Val Gly Ala Ala Thr Val
 100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val
 115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu
 130 135 140

Cys Asn Cys Ser Ile
 145

<210> 39
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 39
 gacgggatca attatgcaac aggggaacctc cccggttgct ctttctctat cttcatcctg 60
 gcatttctct cgtgcctgac tgtcccggcc tcggctcagc attatcgga tgtctcgggc 120
 atttaccacg tcaccaacga ctgcccgaac tccagcatag tgtatgagtc cgaccatcac 180
 atcttacacc taccaggggtg tgtaccctgt gtgaagactg ggaacacttc gcgctgctgg 240
 gtggccttaa cacctaccgt ggccgcgccc atactttcgg ctccacttat gtccgtacgg 300
 cggcatgtgg atctgatggg ggggtgcagct accctatcgt ctgccctcta cgttgagagac 360
 ctctgcgggg gtgccttcct agtggggcag atgttcacct tccagccgcg tcgccactgg 420
 actgtccaag actgcaactg ttccatc 447

<210> 40
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<400> 40

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
 1 5 10 15

Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
 20 25 30

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys

35

40

45

Pro Asn Ser Ser Ile Val Tyr Glu Ser Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Lys Thr Gly Asn Thr Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Ile Leu Ser Ala Pro Leu
85 90 95

Met Ser Val Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu
100 105 110

Ser Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
115 120 125

Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 41
<211> 957
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (383)..(383)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (924)..(924)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (387)..(387)
<223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (928)..(928)
 <223> n represents any nucleotide

<400> 41
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa atactaaccg tcgccctatg 60
 gacgtcaagt tcccggggcgg cggccagatc gttggtggag tttacttggt gccgcgcagg 120
 ggccctcggt tgggtgtgcg cgcgacgaga aagacctccg aacggtccca gcctagaggc 180
 aggcgccagc ccataccaaa ggtacgccag ccgacaggcc gtagctgggg tcaacccggc 240
 tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtccccc 300
 cgcgggtctc gtcctaattg gggccccaac gacccccggc gaagggtccc caacttgggt 360
 aaggtcatcg atacccttac atncggncta gccgacctca tggggtacat ccctgtccta 420
 ggagggccgc ttggcggcgt tgcggctgcc ctggcgcgatg gcgttagggc aatcgaggac 480
 ggggtcaatt acgcaacagg gaatcttcct ggttgctcct tttctatctt cctcttagca 540
 ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggatc 600
 taccatctta ccaatgactg ctccaacaac agcatcgttt ttgaggcgga gaccatgata 660
 ctgcatcttc caggttggtg cccatgtatc aaggcgggga atgagtcacg atgttggtc 720
 cctgtctccc ccaccttagc cgtccccaac tcatcagtgc caatccacgg gtttcgccga 780
 cacgtagacc tcctcgttgg ggcagcgga ttttgttcgg ccatgtacat cggagacctc 840
 tgtggtagca taatcttggg agggcagctt tttactttca ggctaagta ccatcaggtt 900
 acccaggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 42
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (128)..(129)
 <223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (308)..(308)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (310)..(310)
<223> Xaa represents any amino acid

<400> 42

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa
115 120 125

Xaa Leu Ala Asp Leu Met Gly Tyr Ile Pro Val Leu Gly Gly Pro Leu
130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp

145		150		155		160
Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile						
	165		170		175	
Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ile						
	180		185		190	
Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu Thr Asn Asp Cys Ser						
	195		200		205	
Asn Asn Ser Ile Val Phe Glu Ala Glu Thr Met Ile Leu His Leu Pro						
	210		215		220	
Gly Cys Val Pro Cys Ile Lys Ala Gly Asn Glu Ser Arg Cys Trp Leu						
225		230		235		240
Pro Val Ser Pro Thr Leu Ala Val Pro Asn Ser Ser Val Pro Ile His						
	245		250		255	
Gly Phe Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys						
	260		265		270	
Ser Ala Met Tyr Ile Gly Asp Leu Cys Gly Ser Ile Ile Leu Val Gly						
	275		280		285	
Gln Leu Phe Thr Phe Arg Pro Lys Tyr His Gln Val Thr Gln Asp Cys						
	290		295		300	
Asn Cys Ser Xaa Asn Xaa Gly His Val Thr Gly His Arg Met Ala						
305		310		315		

<210> 43
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (446)..(446)
 <223> n represents any nucleotide

<220>

<221> misc_feature
<222> (467)..(467)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (470)..(470)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (483)..(483)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (500)..(500)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (513)..(514)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (520)..(520)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (531)..(531)
<223> n represents any nucleotide

<400> 43
atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acaccatccg ccgcccacag 60
gacgtcaagt tcccgggtgg cggccagatc gttggtggag tctacttgct gccgcgcagg 120
ggcccgcgct tgggtgtgcg cgcgacgaga aagacttctg aacggtccca gcccagaggt 180

aggcgccaac caatacccaa agtgcgccac caaacgggcc gtacctgggc ccagcccg	240
taccctggc ctctttatgg aaatgagggc tgtggttggg caggctggct cctgtcccc	300
cgcggtcttc gcccaaattg gggcccaaac gacccccggc ggaggtcccg caacttgggt	360
aaagtcacgc acacccttac ttgcggcttc gccgacctca tggggtatat cctgtcgt	420
ggcgctccgw tgggaggcgt cgcggnngcc ttggcgcatg gggtcanggn catcgaggac	480
gngntaaatt acgcaacagn gaatcttccc ggnngctctn tctctatctt nctcttggca	540
cttctctcgt gccttacaac accagcctcc gcggcgcatt ataccaaaa gtctggcctg	600
taccatctca ccaacgactg cccaacagc agcatcgttt atgaggcgga gacactgatt	660
ttgcacttgc ctgggtgtgt accttgtgtg aagrtgraca atcaatcccg gtgctgggtg	720
caggcctccc cgaccctggc agtgccgaac gcgtctacgc cagtcaccgg gttccgaaa	780
catgtggaca tcatggtggg cgctgccgcg ttctgttcag ctatgtatgt gggggacctg	840
tgcgggggcc ttttctcgt tggacagctc ttcacgctca ggctcggat gcatcaggtt	900
gtccaggagt gtaactgttc catctacaca gggcatatca ctggacaccg aatggca	957

<210> 44
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (144)..(144)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (149)..(149)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (156)..(157)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE

<222> (161)..(161)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (167)..(167)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (171)..(172)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (174)..(174)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (232)..(233)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (177)..(177)
<223> Xaa represents any amino acid

<400> 44

Met	Ser	Thr	Leu	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Ile
1				5					10					15	

Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		

Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala
		35						40				45			

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Xaa
130 135 140

Gly Gly Val Ala Xaa Ala Leu Ala His Gly Val Xaa Xaa Ile Glu Asp
145 150 155 160

Xaa Val Asn Tyr Ala Thr Xaa Asn Leu Pro Xaa Xaa Ser Xaa Ser Ile
165 170 175

Xaa Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ala
180 185 190

His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Xaa Xaa Asn Gln Ser Arg Cys Trp Val
225 230 235 240

Gln Ala Ser Pro Thr Leu Ala Val Pro Asn Ala Ser Thr Pro Val Thr
245 250 255

Gly Phe Arg Lys His Val Asp Ile Met Val Gly Ala Ala Ala Phe Cys
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly

275

280

285

Gln Leu Phe Thr Leu Arg Pro Arg Met His Gln Val Val Gln Glu Cys
 290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
 305 310 315

<210> 45
 <211> 413
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (302)..(302)
 <223> n represents nucleotide

<220>
 <221> misc_feature
 <222> (340)..(340)
 <223> n represents nucleotide

<220>
 <221> misc_feature
 <222> (384)..(384)
 <223> n represents nucleotide

<400> 45
 atgagcacac ttcctaaacc tcaaagaaaa accaaacgaa acaccaaccg tcgcccacag 60
 gacgtcaagt tcccgggtgg cggtcagatc gttggtggag ttacttgtt gccgcgcagg 120
 ggccctcggt tgggtgtgcg cgcgacgagg aaaacttctg aacggtccca gccaggggt 180
 agacgccaac ctataccgaa ggtgcgtcac caaacgggcc gtacctgggc tcaaccggg 240
 taccctggc ctctttatgg gaatgagggt tgtggctggg cagggtggct cctgtcccc 300
 cncggctctc gccctaattg gggcccta gacccccggn ggaggtcccg caacctgggt 360
 aagggtcatcg atacccttac ttgnngsttc gccgacctca tagagtacat tcc 413

<210> 46
<211> 137
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (101)..(101)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (114)..(114)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (128)..(129)
<223> Xaa represents any amino acid

<400> 46

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Xaa Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro

100	105	110
Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa		
115	120	125

Xaa Phe Ala Asp Leu Ile Glu Tyr Ile
130 135

<210> 47
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (324)..(324)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (340)..(340)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (455)..(455)
 <223> n represents any nucleotide

<400> 47
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acacaaaccg tcgcccgaatg 60
 gatgtcaagt tcccgggacg cggtcagatc gttggtggag tctacttggt accgcgcagg 120
 ggcccacgtt tgggtgtgcg cgcgacgagg aagacttcgg aacggtccca ggccagaggt 180
 aggcgccaac caatacccaa ggtgcgccag aaccaaggcc gaacctgggc tcagcctggg 240
 tacccttggc ccttttatgg gaacgagggc tgcggctggg cggggtggct cttgtcccc 300
 cgtggctctc gcccgactg gggncccaat gacccccggn ggaggtcccg caacctgggt 360
 aaggtcatcg acaccctcac ttgcggcttc gccgacctca tggagtacat ccctgtcggt 420
 ggcgcccccc ttggaggcgt tgcggcgga ctggnacatg gtgtcagggc catcgaggac 480

gggataaact atgcaacagg gaatcttcct ggttgctctt tctctatctt ccwcttggca 540
 cttctctcgt gcctcaccac gcctgcctcc gcactaaact atgctaacaa gtctgggctg 600
 tatcatctaa ccaatgactg cccaatagc agcattgtgt atgaggcgaa tggcatgac 660
 ctgcatctcc cgggttgctg cccctgcgtg aagaccggca acctgaccaa gtgttggtg 720
 tcggcctccc cgacattggc ggtgcagaat gcgtcgggtg ccatcagggg tgtccgcgag 780
 cacgtggacc tcttggtggg tgctgctgctg ttctgctctg ccatgtacgt gggcgactta 840
 tgcggtgggc tctttctcgt tgggcagttg ttcacgttca gaccaggat gtatgagac 900
 gccaggact gcaactgttc catctatgca ggccacatca ctgggcaccg gatggcg 957

<210> 48
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (108)..(108)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (114)..(114)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (152)..(152)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (178)..(178)
 <223> Xaa represents any amino acid

<400> 48

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Ala Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asp Trp Xaa Pro Asn Asp Pro
100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Glu Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Ala Glu Leu Xaa His Gly Val Arg Ala Ile Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Xaa Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu
180 185 190

Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asn Gly Met Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Thr Gly Asn Leu Thr Lys Cys Trp Leu

225	230	235	240
Ser Ala Ser Pro Thr Leu Ala Val Gln Asn Ala Ser Val Ser Ile Arg			
	245	250	255
Gly Val Arg Glu His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys			
	260	265	270
Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly			
	275	280	285
Gln Leu Phe Thr Phe Arg Pro Arg Met Tyr Glu Ile Ala Gln Asp Cys			
	290	295	300
Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala			
305	310	315	

<210> 49
 <211> 309
 <212> DNA
 <213> hepatitis C virus

<400> 49	
atgagcacac ttcctaaacc acaaagaaaa accaaaagaa acaccaaccc cggccacagg	60
acgttaagtt cccaggcggc ggtcagatcg ttggtggagt ttacgtgcta ccacgcaggg	120
gccccagtt ggggtgtgct gcagtgcgca agacttccga gcggtcgcaa cctcgcagta	180
ggcgccaacc catccccagg gcgcgccgaa ccgagggcag gtccctgggct cagccccgggt	240
acccttggcc cctatatggg aatgagggct gcgggtgggc aggggtggctc ctgtccccgc	300
gcggctctc	309

<210> 50
 <211> 115
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (17)..(17)
 <223> Xaa represents any amino acid

<400> 50

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

/ Xaa Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Gln Leu Gly Val Arg Ala
35 40 45

Val Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Ser Arg Arg Gln Pro
50 55 60

Ile Pro Arg Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg
115

<210> 51

<211> 447

<212> DNA

<213> hepatitis C virus

<400> 51

gacggaatta atttcgcaac agggaattta cctgggttgct ctttctctat cttccttctg 60

gctttgttct catgcttgct tacaccaca gccgggctgg agtaccgtaa tgcctccgga 120

ctctacatgg taactaacga ctgcagtaac ggtagtatcg tgtatgaggc cggggatatt 180

atcctccact tacctggctg tgtcccctgc gtacgctctg gcaatacatc aagatgctgg 240

atccctgtga gcccyaccgt cgccgtgaag tcgccctgcg ccgccaccgc ctctctccgc 300
acgcacgtgg atatgatggt ggggrgcggcc accctatgct cagctctcta cgtaggagac 360
ctttgtggag cgctatttct tgytygggcag gggttctcat ggagacatcg ccagcattgg 420
actgtccagg actgcaactg ttccatc 447

<210> 52
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (82)..(85)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (108)..(108)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (128)..(128)
<223> Xaa represents any amino acid

<400> 52

Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Leu Thr Pro Thr Ala Gly
20 25 30

Leu Glu Tyr Arg Asn Ala Ser Gly Leu Tyr Met Val Thr Asn Asp Cys
35 40 45

Ser Asn Gly Ser Ile Val Tyr Glu Ala Gly Asp Ile Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Ser Gly Asn Thr Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Ser Xaa Thr Val Ala Val Lys Ser Pro Cys Ala Ala Thr
85 90 95

Ala Ser Leu Arg Thr His Val Asp Met Met Val Xaa Ala Ala Thr Leu
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ala Leu Phe Leu Xaa
115 120 125

Gly Gln Gly Phe Ser Trp Arg His Arg Gln His Trp Thr Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 53
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 53
ctcgacagtt actgagaatg acatccgtgt cgaggaatca atataccaat gttgtgactt 60
ggcccccgag gctcgcaagg ccataaagtc gctcaccgag cggctgtaca tcggggggccc 120
yctaaccaat tcaaaaggac agaactgcgg ctaccgtcgg tgccgcgccca gcggcgtgct 180
gactaccagc tgccggaaca ccctgacatg ctacttgaaa gccagagcgg cctgtcgagc 240
tgcaaagctc cgggactgca ccatgctcgt gtgcggggat gaccttgctg ttatctgtga 300
gagtgcggga gtcgaggaag acgcggcgaa cctacgagct 340

<210> 54
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (40)..(40)
<223> Xaa represents any amino acid

<400> 54

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Xaa Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
100 105 110

Ala

<210> 55

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 55

ctcgacagtt actgagaacg acatccgtac cgaggratca atctatcaat gttgtgactt 60

ggccccygag gcccgcaagg ccataaagtc gctcaccgag cggctgtacg tcggggggccc 120

cctaaccaat tcaaaggggc agaactgcgg ctatcgtcgg tgtcgcgcta gcggcggtgct 180

gaccaccagc tgcggcaaca ccctcacatg ctacttgaaa gccagggcgg cctgtcgagc 240

tgcaaagctc caggactgca cgatgctcgt gtgcggagac gaccttgctg ttatctgtga 300
gagcgcggga gtcgaggagg acgcggcgaa cctacgagtc 340

<210> 56
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Xaa represents any amino acid

<400> 56

Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Xaa Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Xaa Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
100 105 110

Val

<210> 57
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 57
ctcgacagtt actgagaacg acattcgtgt cgaggaatca atctaccagt gctgtgactt 60
ggcccccgag gcccgcaagg ccataaagtc gtcaccgag cggctgtata tcgggggtcc 120
cctaaccaac tcaaaagggc agaactgcgg ctaccgtcgg tgccgcgcca gcggcgtgct 180
gactaccagc tgcggttaata ccctcacatg ttacttgaaa gccagggcgg cctgtcgagc 240
tgcaagctc caggactgca caatgctcgt gtgcggagac gacctgtcg ttatctgtga 300
gagtgcrgga gtcgaggagg atgcggcgaa cctacgagtc 340

<210> 58
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (102)..(102)
<223> Xaa represents any amino acid

<400> 58

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
 65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Cys Glu Ser Xaa Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
 100 105 110

Val

<210> 59
 <211> 652
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (524)..(524)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (625)..(625)
 <223> n represents any nucleotide

<400> 59
 cgtacagcct ccaggacccc ccctcccggg agagccatag tggctctgcgg aaccggtgag 60
 tacaccggaa ttgccaggac gaccgggtcc tttcttgat caaccgctc aatgcctgga 120
 gatttgggcg tgcccccgca agactgctag ccgagtagtg ttgggtcgcg aaaggccttg 180
 tgggtactgcc tgatagggtg cttgcgagt ccccgaggag tctcgtagac cgtgcaccat 240
 gagcacgaat cctaaacctc aaagaaaaac caaaagaaac accaaccgcc gccacagga 300
 cgtcaagttc cggggcgggtg gccagatcgt tgggtggagtc tacgtgctac cgcgcagggg 360

ccctagattg ggtgtgcgcg cagcgcggaa gacttcggag cggtcgcaac ctctgtgggag 420
 gcgccaacct attcccaagg agcgccgacc cgagggcagg tcctgggcgc agcccgggta 480
 cccctggccc ctctatggta acgagggctg cgggtgggca ggtnggctcc tgtcccctcg 540
 cggctcccggt cctagttggg gtcctactga cccccggcgt aggtcacgca atttgggtaa 600
 ggtcatcgat accctcacgt gttgnttcgc cgacctcatg gggtacatac cg 652

<210> 60
 <211> 138
 <212> PRT
 <213> hepatitis C virus

<220>
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 <222> (96)..(96)
 <223> Xaa represents any amino acid

<220>
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 <222> (129)..(129)
 <223> Xaa represents any amino acid

<400> 60

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Ala Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Xaa
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Xaa Phe Ala Asp Leu Met Gly Tyr Ile Pro
130 135

<210> 61
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 61
ctcaacggtc actgaagctg atatccgaac agaggagtcc atataccaat gctgtgacct 60
gcaccccgaa gcacgtgtag ccatcaagtc tttgactgaa aggctgtacg tcggggggcc 120
cttgaccaat tcaaaagggg agaactgcgg ctatcgaga tgccgtgcca gcggcgctctt 180
gacaaccagc tgcggcaaca ccctcacctg ctatatcaag gccctagcag cctgtagagc 240
tgccaagctc caggactgca ccatgctcgt ctgtggcgac gacctggctg tgatctgcga 300
gagtgtaggg acccaggagg atgcggcgag cctgcgagcc 340

<210> 62
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 62

Ser Thr Val Thr Glu Ala Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu His Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Glu Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Val Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg
100 105 110

Ala

<210> 63
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
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<222> (1)..(1)
<223> n represents any nucleotide

<220>
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<222> (311)..(311)
<223> n represents any nucleotide

<220>
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<222> (316)..(316)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (330)..(340)
<223> n represents any nucleotide

<400> 63
ntcaacagtc actgagagtg atatccgtac agaggagtcc atctaccaat gctgtgatct 60
agaccccgag gctcgcaagg ccataaggtc cctcacagag aggctttata tcgggggtcc 120
cctgacaaac tcaaaagggc agaactgcgg ctaccgccga tgccgtgcaa gcggcgctct 180
gacgactagc tgccggaaca ccctcacctg ttacataaag gccagggcag cctgtcgagc 240
tgccaagctc caggattgct caatgctcgt ctgtggcgac gaccttgctg ttatctgcga 300
gatcgagggg ntccangagg atccgtcgan nnnnnnnnnn 340

<210> 64
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
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<222> (104)..(105)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (110)..(113)
<223> Xaa represents any amino acid

<400> 64

Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Asp Pro Glu Ala Arg Lys Ala Ile Arg Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys

50

55

60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ile Glu Gly Xaa Xaa Glu Asp Pro Ser Xaa Xaa Xaa
100 105 110

Xaa

<210> 65
<211> 831
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (779)..(779)
<223> n represents any nucleotide

<400> 65
cgtagaccgt gcaccatgag cacgaatcct aaacctcaaa gaaaaaccaa acgtaacatc 60
aaccgccgcc cacaggacgt caagttcccg ggcggtggcc agatcgtcgg tggagtttac 120
ctgttgccgc gcaggggccc tagattgggt gtgcgcgcga ctaggaagac ttccgagcgg 180
tcgcaacctc gtgggaggcg acagcctatc cccaaggctc gccgatccga gggcaggtcc 240
tgggctcagc ccgggtaccc ttggcccctc tatggcaatg agggcatggg ttgggcaggg 300
tggctcctgt ccccccattg ctcccggcct agttggggcc cttcagacct ccggcgtagg 360
tcgcgtaatt tgggtaaggt catcgatacc ctcacatgcg gcttcgccga cctcatgggg 420
tacattccgc tcgtcggcgc ccccttaggg ggcgttgcca gggccctggc gcaaggcttc 480
cgggatctac cacgtcacca acgattgttc caatgggagc attgtgtatg aggcggaagg 540
catgatcatg catctccccg ggtgcgtgcc ctgcgttcgg gaaggtaata tctctcgttg 600
ctgggtaccg ttttccccca cgctcgcagc caggaatgct agcgtcccca ctcaggcaat 660

tcggcgacac gtcgacttgc ttgttggggc ggccacactc tgttctgcta tgtatgtggg	720
ggacctctgt ggggtccgtct tctctgctcg ccaactgttc accttcacaw cccgccagna	780
ctacacagtg caagactgca attgttccat ctaccccggc catataacgg g	831

<210> 66
 <211> 158
 <212> PRT
 <213> hepatitis C virus

<400> 66

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Ile Asn	
1 5 10 15	

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly	
20 25 30	

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala	
35 40 45	

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro	
50 55 60	

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly	
65 70 75 80	

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp	
85 90 95	

Leu Leu Ser Pro His Gly Ser Arg Pro Ser Trp Gly Pro Ser Asp Pro	
100 105 110	

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys	
115 120 125	

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu	
130 135 140	

Gly Gly Val Ala Arg Ala Leu Ala Gln Gly Phe Arg Asp Leu	
145 150 155	

<210> 67
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(7)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (334)..(340)
<223> n represents any nucleotide

<400> 67
nnnnnnngtc actgagagtg atatccgtgt cgaggartca attaccaat gctgtgacct 60
ggcccccgag gctcgcgtag ccataaagtc gctcactgag cggctatatg tcggggggccc 120
tctcaccaac tcaaaaggac agaactgcgg ctatcgccgg tgccgtgcga gcggtgtgct 180
gactactagc tgccggaaca ccctcacatg ctacctgaaa gccgccgcgg cctgtcgagc 240
tgcaaagctc cgggaatgca caatgctcgt gtgtggcgac gacctcgtcg ttatctgtga 300
gagtgcgggg gtccaggagg atgctgcaag cctnnnnnnn 340

<210> 68
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
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<222> (1)..(2)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Xaa represents any amino acid

<220>
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 <222> (111)..(113)
 <223> Xaa represents any amino acid

<400> 68

Xaa Xaa Val Thr Glu Ser Asp Ile Arg Val Glu Xaa Ser Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala
 65 70 75 80

Ala Lys Leu Arg Glu Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Xaa Xaa
 100 105 110

Xaa

<210> 69
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (28)..(28)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (336)..(340)
 <223> n represents any nucleotide

<400> 69
 ctgcacagtc acagagagag atataagnac tgaggagtcc atataccagg cttgttcctt 60
 acccgagcag gccagaactg ccatacactc attgactgag agactctacg taggagggcc 120
 catgatgaac agcaaagggc aatcctgcgg atacaggcatt tgccgcgcca gcggagtgct 180
 caccaccagt atggggaata ccatcacgtg ctacatcaag gccctagcgg cttgtaaagc 240
 agcaggaata gtggcccca ccatgctggt gtgcggcgat gacctagttg tcatctcaga 300
 gagtcaggga gtcgaggagg acgaccggaa cctgannnnn 340

<210> 70
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (9)..(9)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (112)..(113)
 <223> Xaa represents any amino acid

<400> 70
 Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu Glu Ser Ile Tyr Gln
 1 5 10 15
 Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
 35 40 45

Cys Gly Tyr Arg His Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala
 65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Gln Gly Val Glu Glu Asp Asp Arg Asn Leu Xaa
 100 105 110

Xaa

<210> 71
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 71
 ctcaaccgtc acagagaggg atataagaac tgaggagtcc atatacctgg cctgctcctt 60
 acccgagcag gcccggactg ccatacattc attaactgag agactttacg tgggagggcc 120
 catgatgaac agcaaagggc agtcctgcgg atacaggcgt tgccgcgcta gcggagtgct 180
 caccaccagt atggggaaca ccatcacgtg ttatgtgaaa gccctcgcag cttgtaaagc 240
 tgcgggcatt gttgccccca cgatgctggt gtgcggcgat gacctggttg tcatctcaga 300
 gagtcagggg gctgaggagg acgagcgaaa cctgagagtc 340

<210> 72
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 72

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Ala Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Val

<210> 73

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 73

ctcaacagtc gcggagagag acatcaggac cgaggagtcc atttaccttg cctgctcctt 60
acccgagcaa gcccgaactg ccatacattc attgactgag agactttacg taggagggcc 120
catgatgaac agcaagggaac agtcctgcgg ttacagacgt tgccgcgcca gcggagtgtc 180
caccaccagc atggggaata ccatcacatg ctatgtgaag gcattagctg cctgcaaagc 240
tgcaggcatc gttgctccca cgatgctggg ttgtggcgac gatctggtca tcatctcaga 300
gagtcaggga accgaggagg atgagcggaa cctgagagtc 340

<210> 74
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 74

Ser Thr Val Ala Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ile Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Val

<210> 75
<211> 1195
<212> DNA
<213> hepatitis C virus

<220>
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<222> (3)..(3)
<223> n represents any nucleotide

<220>
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<222> (7)..(7)
<223> n represents any nucleotide

<220>
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<222> (352)..(352)
<223> n represents any nucleotide

<220>
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<222> (361)..(361)
<223> n represents any nucleotide

<220>
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<222> (369)..(369)
<223> n represents any nucleotide

<220>
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<222> (371)..(371)
<223> n represents any nucleotide

<220>
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<222> (374)..(374)
<223> n represents any nucleotide

<220>
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<222> (387)..(387)
<223> n represents any nucleotide

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<222> (395)..(395)
<223> n represents any nucleotide

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<222> (446)..(446)
<223> n represents any nucleotide

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<222> (621)..(621)
<223> n represents any nucleotide

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<222> (629)..(629)
<223> n represents any nucleotide

<220>
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<222> (798)..(798)
<223> n represents any nucleotide

<220>
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<222> (887)..(887)
<223> n represents any nucleotide

<220>
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<222> (887)..(888)
<223> n represents any nucleotide

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<222> (890)..(891)
<223> n represents any nucleotide

<220>
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<222> (978)..(978)
<223> n represents any nucleotide

<220>
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<222> (1194)..(1194)
<223> n represents any nucleotide

<220>
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<222> (673)..(673)
<223> n represents any nucleotide

<400> 75
cgnacancct ccaggccccc cctcccgagg agagccatag tggctctgcgg aaccgggtgag 60
tacaccggaa ttgccgggaa gactgggtcc tttcttggat aaaccactc tatgcccggc 120
catttggggcg tgcccccgca agactgctar ccgagtagcg ttgggttgcg aaaggccttg 180
tgggtactgcc tgataggggtg cttgcgagtg ccccgaggagg tctcgtagac cgtgcacatc 240
gagcacaat cctaaacctc aaagaaaaac caaaagaaac actaaccgcc gccacagga 300
cgttaagttc ccgggcggtg gccagatcgt tggcggagta tacttggtgc cntgcagggg 360
ncccggtng ngtnatgcg caacgangaa gactnccgaa cagtcccagc cacgtgggag 420
gcgccagccc atcccgaaag atcgngcac cactggcaag tcctggggac gtccaggata 480
tccttgccc ctgtatggga acgagggcct cgggtgggca ggggtggctcc tgtcccccg 540
gggtcccgcc ccgtcatggg gcccacagga ccccggcac aggtcgcgca acttgggtaa 600
gggtcatcgat accctcacgt ncggctttnc cgacctcatg gggtagattc ccgtcggttg 660
cgccccagta ggnggcgtcg ccagagctct cgcgcatggc gtgagagtcc tggaggacgg 720
gataaactat gaaacagga acctccccgg ttgctctttc tctatctccc tccttgctct 780
tctgtcctga attaccngc cagtttctgc tgtggaaatc aaaaacacca gmaacacata 840
catggtgact aacgactgtt caaacagyag catcacctgg cagcttnngn ncgcggtgct 900
tcacgttcct ggatgcgtcc cctgtgaacg agagggcaac agttcccggg gctggattcc 960
agtcacgccc racgtakncg tgagccgacc tgggtgcccta accgaggggt tgcgatcgca 1020
catcgacacc atcgtagcgt ccgcaacatt ttgttctgcc ctctacatag gggatgtatg 1080
tggcgcgata atgatagctg cccaagtggg catcgtctcg ccggagcatc atcactttgt 1140
ccaggactgt aactgttcca tctaccggg ccacataacg gggcctcgta tgtng 1195

<210> 76
<211> 318
<212> PRT
<213> hepatitis C virus

<220>
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<222> (38)..(38)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (41)..(41)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (44)..(44)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (44)..(46)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (50)..(50)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (53)..(53)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (70)..(70)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE

<222> (128)..(128)
<223> Xaa represents any amino acid

<220>
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<222> (131)..(131)
<223> Xaa represents any amino acid

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<222> (145)..(145)
<223> Xaa represents any amino acid

<220>
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<222> (186)..(186)
<223> Xaa represents any amino acid

<220>
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<222> (197)..(197)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (209)..(209)
<223> Xaa represents any amino acid

<220>
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<222> (216)..(217)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (244)..(244)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (246)..(246)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (318)..(318)

<223> Xaa represents any amino acid

<400> 76

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Xaa Cys Arg Xaa Pro Arg Xaa Xaa Xaa Cys Ala
35 40 45

Thr Xaa Lys Thr Xaa Glu Gln Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Xaa Thr Thr Gly Lys Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa
115 120 125

Gly Phe Xaa Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Xaa Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Glu Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile

cgcggggcatt gttgcaccca caatgctggt gtgtggcgac gacctgggtcg tcattctcaga 300
gagtcagggg actgagaggg acgagaacaa cctgagacct 340

<210> 78
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 78

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Ser Val Tyr Leu
1 5 10 15

Ser Cys Ser Leu Pro Glu Glu Ala Arg Ala Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Gln Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Arg Asp Glu Asn Asn Leu Arg
100 105 110

Pro

<210> 79
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 79
 ctcaacagtc acggagaggg acatcaggaa tgaggagtcc atattcctgg cctgctcggt 60
 gcccgaggag gcccggactg tcatacatte gctcactgag agactctaca taggcggggcc 120
 gatgatgaac agcaaaggcc agtcctgtgg atacaggcgt tgtcgcgccca gcggggtggt 180
 caccactagc atgggcaata ccatcacgtg ctatgtgaaa gccatggcag cttgcagagc 240
 tgccgggatt gacgccccca caatgttggt atgtggcgac gacctggtgg tcatctcaga 300
 gagtcagggg accgaggagg acgagcgaaa tctgagagtc 340

<210> 80
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 80

Ser	Thr	Val	Thr	Glu	Arg	Asp	Ile	Arg	Asn	Glu	Glu	Ser	Ile	Phe	Leu
1				5					10					15	
Ala	Cys	Ser	Leu	Pro	Glu	Glu	Ala	Arg	Thr	Val	Ile	His	Ser	Leu	Thr
			20					25					30		
Glu	Arg	Leu	Tyr	Ile	Gly	Gly	Pro	Met	Met	Asn	Ser	Lys	Gly	Gln	Ser
		35					40					45			
Cys	Gly	Tyr	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Met
	50					55					60				
Gly	Asn	Thr	Ile	Thr	Cys	Tyr	Val	Lys	Ala	Met	Ala	Ala	Cys	Arg	Ala
65					70					75				80	
Ala	Gly	Ile	Asp	Ala	Pro	Thr	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
			85					90						95	
Val	Ile	Ser	Glu	Ser	Gln	Gly	Thr	Glu	Glu	Asp	Glu	Arg	Asn	Leu	Arg
		100						105					110		
Val															

<210> 81
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 81
 ctcttgactc tactgtcact gaacaggata tcagggtaga agaagaaata taccaatgtt 60
 gtgaccttga gccggaggct agacgggcaa tcaaatcgct cacggaacgg ctttacgttg 120
 gaggtcccat gttcaacagc aaggggctca aatgcggata tcgccgttgc cgtgctagcg 180
 gtgtattgcc cactagctac ggtaatacaa tcacctgcta catcaaggcc agagcggctg 240
 ctcgagctgc gggccttcaa gacccatcat tccttgtctg cggagatgat ttggtggtag 300
 tggctgagag ttgcgkcggt gatgaggagg atagggcagc 340

<210> 82
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (103)..(103)
 <223> Xaa represents any amino acid

<400> 82

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Leu Lys
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Tyr
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Arg Ala Ala Ala Arg Ala
 65 70 75 80

Ala Gly Leu Gln Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Val Ala Glu Ser Cys Xaa Val Asp Glu Glu Asp Arg Ala Ala Leu
 100 105 110

Arg

<210> 83
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (336)..(336)
 <223> n represents any nucleotide

<400> 83
 ctccactgta accgaaaagg acatcaggcc cgaggaagag gtctatcagt gttgtgacct 60
 ggagcccgaa gctcgcaagg ttattaccgc cctcacagaa agactctacg tgggcggccc 120
 catgcacaac agcaagggag acctttgtgg gtatcggaga tgccgcgcaa gcggcgtcta 180
 caccgaccagc ttcggaaaca cactgacgtg ctacctcaaa gcctcagctg ctattagagc 240
 ggcagggctg agagactgca ccatgctggt ttgcggtgac gacttggtcg tcatcgctga 300
 gagcgatggc gtagaggagg ataaccgagc cctccnagcc 340

<210> 84
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
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 <222> (112)..(112)
 <223> Xaa represents any amino acid

<220>
 <221> misc_feature
 <223> Xaa represents any amino acid

<400> 84

Ser Thr Val Thr Glu Lys Asp Ile Arg Pro Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
 65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Asn Arg Ala Leu Xaa
 100 105 110

Ala

<210> 85
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 85
 ctccacggtg actgaaaagg acatcagggt cgaggaagag atctatcaat gttgtgacct 60

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ggarcccgaa gcccgcaaag caatatccgc cctcacagag agrctctact tgggcggccc      120
catgtataac agcaaagggg agctctgcgg gtatcggagg tgccgcgcga gcggagtgt      180
caccacaagt ttcgggaaca cagtgcctg ctatcttaag gccaccgcag ctaccagggc      240
tgcaggccta aaagactgca ccatgctggt ctgcggtgac gacttggtcg tcatcgccga      300
gagcgagggc gtagaggagg attcccaacc cctccgagcc      340

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<210> 86
<211> 113
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (34)..(34)
<223> Xaa represents any amino acid

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<400> 86

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Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1          5          10          15

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Cys Cys Asp Leu Xaa Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
          20          25          30

```

```

Glu Xaa Leu Tyr Leu Gly Gly Pro Met Tyr Asn Ser Lys Gly Glu Leu
          35          40          45

```

```

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
          50          55          60

```

```

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65          70          75          80

```

```

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val

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85

90

95

Val Ile Ala Glu Ser Glu Gly Val Glu Glu Asp Ser Gln Pro Leu Arg
 100 105 110

Ala

<210> 87
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 87
 ctccaccgta accgaaaggg acatcagggg cgaggaggag gtctatcagt gttgtgatct 60
 ggagccagag gcccgcaagg caatatccgc cctcacggag agactctatg tgggcgggtcc 120
 catgtttaac agcaagggag acctatgtgg ctaccgcagg tgccgcgcaa gcggcgtcta 180
 caccaccagc ttcggaaca cactgacctg ctacctcaag gccacggccg ctaccagagc 240
 ggccggcctg aaggattgca caatgctggg ttgcggggac gacctggtcg tcatcgcaga 300
 gagcgatggc gtggacgagg accgccgagc cctccaagct 340

<210> 88
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 88

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Asp Glu Asp Arg Arg Ala Leu Gln
 100 105 110

Ala

<210> 89
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (111)..(111)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (126)..(126)
 <223> n represents any nucleotide

<400> 89
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 catgtntaac tctaaaggtc aggcatgtgg ataccgtagg tgcagggcca gtggcgtctt 180
 gaccaccatc ctggccaata ctctgacttg ctacttgaaa gctcaggcgg catgcagagc 240
 tgccgggctg aaggactttg acatgttggt ctgcggagac gaccttgtcg ttatttcgga 300
 gagtttgggg gtctcggagg acactagtgc actgcgagct 340

<210> 90
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (37)..(37)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (42)..(42)
<223> Xaa represents any amino acid

<400> 90

Ser Thr Val Thr Glu Arg Asp Val Gln Thr Glu His Asp Ile Tyr Gln
1 5 10 15

Cys Cys Lys Leu Glu Pro Ala Ala Arg Thr Ala Ile Thr Ser Leu Thr
20 25 30

Asp Arg Leu Tyr Xaa Gly Gly Pro Met Xaa Asn Ser Lys Gly Gln Ala
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ile Leu
50 55 60

Ala Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Leu Gly Val Ser Glu Asp Thr Ser Ala Leu Arg
100 105 110

Ala

<210> 91
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 91
ctcgacagtc accgagcgcg acatccrcac cgagcacgac atctaccaat gctgccaaact 60
tgacccgggtg gcacgcaagg ctattacatc tctgactgag cggctgtact gcggwggggcc 120
catgatgaac tcccgtgggtc aatcatgtgg ataccgtagg tgccgagcca gtggcgtgct 180
caccacgagc ttgggcaata ccctaacatg ctatttgaaa gcacaagcag cgtgtagggc 240
agcaaagctc aaaaactatg acatgttagt ctgcggagac gatctagtcg ttatcgcgga 300
gagtggagga gtctctgagg atgttgacgc cctgcgagca 340

<210> 92
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (38)..(38)
<223> Xaa represents any amino acid

<400> 92
Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu His Asp Ile Tyr Gln
1 5 10 15
Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr
20 25 30
Glu Arg Leu Tyr Cys Xaa Gly Pro Met Met Asn Ser Arg Gly Gln Ser

35 40 45
 Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Leu
 50 55 60
 Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
 65 70 75 80
 Ala Lys Leu Lys Asn Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95
 Val Ile Ala Glu Ser Gly Gly Val Ser Glu Asp Val Asp Ala Leu Arg
 100 105 110

Ala

<210> 93
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 93
 ctctctccgtc acggagcgtg acatccgcac tgaacacgac atctatcagt gctgcccaatt 60
 agatccggta gcacggaaag ccattacatc tcttactgag cggctgtact gcggcgcccc 120
 catgtacaac tctcgaggtc agtcatgtgg gtaccgcagg tgccgggcta gtggtgtctt 180
 caccacaagc ttgggcaaca ccatgacatg ctacctgaag gctcaggcgg cttgtagggc 240
 agcraagctc aaaaactttg acatgttggt ctgcggagac gacctagtcg ttattgctga 300
 gagcggagga gtccttgagg atgccggggc cctgcgagtc 340

<210> 94
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (81)..(81)
 <223> Xaa represents any amino acid

<400> 94

Ser Ser Val Thr Glu Arg Asp Ile Arg Thr Glu His Asp Ile Tyr Gln
1 5 10 15

Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Arg Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
65 70 75 80

Xaa Lys Leu Lys Asn Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Pro Glu Asp Ala Gly Ala Leu Arg
100 105 110

Val

<210> 95

<211> 340

<212> DNA

<213> hepatitis C virus

<220>

<221> misc_feature

<222> (36)..(36)

<223> n represents any nucleotide

<400> 95

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60

cgacccagag gcccggaag ccataaagtc tctcactgag aggctctatg tcggggggccc 120
 tatgtacaac tcaaagggcc aactctgtgg tcaacgccga tgccgagcaa gcggagtact 180
 cccacaagc atgggtaaca ccatcacatg cttcctgaag gcaaccgccg cttgccgagc 240
 agccggcttt acagattatg acatgttggt ctgcgagagac gatttggttg tcgtaactga 300
 gagtgtgga gtcaacgagg atatcgctaa cctgcgagcc 340

<210> 96
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (12)..(12)
 <223> Xaa represents any amino acid

<400> 96

Ser Thr Val Thr Gly Arg Asp Ile Arg Thr Glu Xaa Asp Ile Tyr Leu
 1 5 10 15

Ser Cys Gln Leu Asp Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Leu
 35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Phe Leu Lys Ala Thr Ala Ala Cys Arg Ala
 65 70 75 80

Ala Gly Phe Thr Asp Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Val Thr Glu Ser Ala Gly Val Asn Glu Asp Ile Ala Asn Leu Arg
 100 105 110

Ala

<210> 97
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 97
ctccactgtc actgagcagg acatcagggg agaactttcc atctttcagg cctgtgacct 60
caaggacgag gctaggaggg tgataacttc actcacggag cggctttact gtggtggtcc 120
tatgttcaac agcaagggac aacactgcgg ttaccgccgc tgccgtgcta gtggggtgct 180
accaccagc ttcgggaaca caatcacctg ttacatcaaa gcaaaggcag ctaccaaagc 240
tgccggaatt aaaaatccat cattccttgt ctgcggagat gacttggtcg tgattgctga 300
gagtgcaggg atcgatgagg acaagagcgc cttgagagct 340

<210> 98
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 98
Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Leu Ser Ile Phe Gln
1 5 10 15
Ala Cys Asp Leu Lys Asp Glu Ala Arg Arg Val Ile Thr Ser Leu Thr
20 25 30
Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Gln His
35 40 45
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe
50 55 60
Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Thr Lys Ala
65 70 75 80

Ala Gly Ile Lys Asn Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Ala Gly Ile Asp Glu Asp Lys Ser Ala Leu Arg
100 105 110

Ala

<210> 99
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 99
ctctaccgtc acagagaggg acatacggac agaagaatcc atctatctgt cttgtcaatt 60
gcctgaagag gcccggaag ccattaaatc gctgacagag agactatacg tgggcggccc 120
gatggaaaac agcaagggcc aggcttgagg atataggcgt tgccgcgcaa gcgggggtatt 180
caccacaagc ttggggaaca ccatgacttg ttacatcaaa gctaaagcgg cttgttaaagc 240
cgctggcatt gtagaccggg tgatgctcgt gtgcggtgac gacctagtgg tcatctcaga 300
aagcaagggg gtggaggagg accagcgga cctacgagtc 340

<210> 100
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 100

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ser Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala

35	40	45
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu		
50	55	60
Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala		
65	70	75
80		
Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val		
85	90	95
Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg		
100	105	110

Val

<210> 101
 <211> 335
 <212> DNA
 <213> hepatitis C virus

<400> 101	
ctccactgtc actgagagag acatacggac agaagaatcc atctayytgg cttgtcaatt	60
gcccgaagag gcccggaagg ccattaaatc actgacagag agactatacg tgggcggccc	120
gatggaaaac agcaaaggcc aggcctgcgg atataggcgt tgccgcgcaa gcgggggtatt	180
caccacaagc ttggggaaca ccatgacttg ttacatcaag gccaaargcag cttgtaaagc	240
ygctggcatt gttgacccgg tgatgctcgt gtgcggcgac gacctagtgg tcatctcaga	300
gagcaagggg gtagaggagg accagcgaga cctac	335

<210> 102
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (15)..(16)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (75)..(75)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (80)..(80)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (112)..(113)
 <223> Xaa represents any amino acid

<400> 102

Ser	Thr	Val	Thr	Glu	Arg	Asp	Ile	Arg	Thr	Glu	Glu	Ser	Ile	Xaa	Xaa
1				5				10						15	

Ala	Cys	Gln	Leu	Pro	Glu	Glu	Ala	Arg	Lys	Ala	Ile	Lys	Ser	Leu	Thr
		20						25					30		

Glu	Arg	Leu	Tyr	Val	Gly	Gly	Pro	Met	Glu	Asn	Ser	Lys	Gly	Gln	Ala
		35					40					45			

Cys	Gly	Tyr	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Leu
	50					55					60				

Gly	Asn	Thr	Met	Thr	Cys	Tyr	Ile	Lys	Ala	Xaa	Ala	Ala	Cys	Lys	Xaa
65					70					75				80	

Ala	Gly	Ile	Val	Asp	Pro	Val	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
				85					90					95	

Val	Ile	Ser	Glu	Ser	Lys	Gly	Val	Glu	Glu	Asp	Gln	Arg	Asp	Leu	Xaa
			100					105					110		

Xaa

<210> 103
 <211> 461
 <212> DNA
 <213> hepatitis C virus

<400> 103
 cgtacagcct ccaggacccc ccctcccgagg agagccatag tggctctgcgg aaccgggtgag 60
 tacaccggaa ttgccgggaa gactgggtcc tttcttggat taaccctactc tatgcccggga 120
 gatttggggcg tgcccccgca agactgctag ccgagtagcg ttgggttgcg aaaggccttg 180
 tgggtactgcc tgataggggtg cttgcgagtg ccccgaggagg tctcgtagac cgtgcaccat 240
 gagcacgaat cctaaacctc aaagacaaac caaaagaaac accaaccgcc gccacagga 300
 cgtaaagtcc ccgggcgggtg gccagatcgt tggcgggggtg tacttggtgc cgcgcagggg 360
 cccagagtg ggtgtgcgcg cgacgagaaa gacctcggag cgggtcccagc cgcgtggggag 420
 gcgccaacct atccccaagg ttaggcgcac caccggccgt t 461

<210> 104
 <211> 74
 <212> PRT
 <213> hepatitis C virus

<400> 104

Met Ser Thr Asn Pro Lys Pro Gln Arg Gln Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Val Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Val Arg Arg Thr Thr Gly Arg
65 70

<210> 105
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (338)..(338)
<223> n represents any nucleotide

<400> 105
ctctactgtc acagagaggg atatacgaac agaggaatcc atytatctgg cttgtcaatt 60
gcccggaagag gcccggaagg ccatcaaadc actgacagag agactatacg tgggcggccc 120
gatggaaaac agcaagggcc aggcctgcgg atacaggcgt tgccgcgcaa gcgggggtatt 180
caccacaagc ttggggaaca ccatgacttg ttacatcaaa gcccaaggcgg cttgtaaagc 240
cgctggcatt gttgaccag tgatgctcgt gtgcggcgac gacctagtgg tcatctcaga 300
aagcaagggg gtggaggagg accaacgaga cctacgantc 340

<210> 106
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (113)..(113)
<223> Xaa represents any amino acid

<400> 106

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Xaa Tyr Leu
1 5 10 15

Ala Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg
100 105 110

Xaa

<210> 107

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 107

Ala Arg Gln Ser Asp Gly Arg Ser Trp Ala Gln
1 5 10

<210> 108

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 108

Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 109

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 109

Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 110

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 110

Ala Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 111

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 111

Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg
1 5 10

<210> 112

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 112

Asp Arg Arg Ala Thr Gly Arg Ser Trp Gly Arg
1 5 10

<210> 113

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 113

Asp Arg Arg Ala Thr Gly Lys Ser Trp Gly Arg
1 5 10

<210> 114

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 114

Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln
1 5 10

<210> 115

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 115

Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln
1 5 10

<210> 116

<211> 11
<212> PRT
<213> hepatitis C virus

<400> 116

Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln
1 5 10

<210> 117
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 117

Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 118
<211> 11
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (8)..(11)
<223> Xaa represents any amino acid

<400> 118

Val Arg Arg Thr Thr Gly Arg Xaa Xaa Xaa Xaa
1 5 10

<210> 119
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 119

Val Arg Arg Thr Thr Gly Arg Thr Trp Ala Gln
1 5 10

<210> 120

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 120

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Val
1 5 10

<210> 121

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 121

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu
1 5 10

<210> 122

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 122

Tyr Glu Val His Ser Thr Thr Asp Gly Tyr His Val
1 5 10

<210> 123

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 123

Val Glu Val Lys Asn Thr Ser Gln Ala Tyr Met Ala
1 5 10

<210> 124

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 124

Ile Gln Val Lys Asn Asn Ser His Phe Tyr Met Ala
1 5 10

<210> 125

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 125

Val Gln Val Lys Asn Thr Ser Thr Met Tyr Met Ala
1 5 10

<210> 126

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 126

Val Gln Val Lys Asn Thr Ser His Ser Tyr Met Val
1 5 10

<210> 127
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 127

Val Gln Val Ala Asn Arg Ser Gly Ser Tyr Met Val
1 5 10

<210> 128
<211> 12
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa represents any amino acid

<400> 128

Val Glu Ile Lys Asn Thr Xaa Asn Thr Tyr Val Leu
1 5 10

<210> 129
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 129

Val Glu Ile Lys Asn Thr Ser Asn Thr Tyr Val Leu
1 5 10

<210> 130
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 130

Ile Asn Tyr Arg Asn Val Ser Gly Ile Tyr Tyr Val
1 5 10

<210> 131

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 131

Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val
1 5 10

<210> 132

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 132

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile
1 5 10

<210> 133

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 133

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val
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<210> 134

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<212> PRT
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<400> 134

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val
1 5 10

<210> 135
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<212> PRT
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<400> 135

Ile Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu
1 5 10

<210> 136
<211> 12
<212> PRT
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<400> 136

Ala His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu
1 5 10

<210> 137
<211> 12
<212> PRT
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<400> 137

Leu Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu
1 5 10

<210> 138
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<400> 138

Leu Glu Tyr Arg Asn Ala Ser Gly Leu Tyr Met Val
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<210> 139
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<212> PRT
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<400> 139

Ile Tyr Glu Met Asp Gly Met Ile Met His Tyr
1 5 10

<210> 140
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<400> 140

Ile Tyr Glu Met Ser Gly Met Ile Leu His Ala
1 5 10

<210> 141
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<212> PRT
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<400> 141

Val Tyr Glu Ala Lys Asp Ile Ile Leu His Thr

1 5 10

<210> 142
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<220>
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<222> (5)..(5)
<223> Xaa represents any amino acid

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<210> 143
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<212> PRT
<213> hepatitis C virus

<400> 143

Val Trp Gln Leu Arg Asp Ala Val Leu His Val
1 5 10

<210> 144
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 144

Ile Trp Gln Met Gln Gly Ala Val Leu His Val
1 5 10

<210> 145

<211> 11
<212> PRT
<213> hepatitis C virus

<400> 145

Val Trp Gln Leu Lys Asp Ala Val Leu His Val
1 5 10

<210> 146
<211> 11
<212> PRT
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<400> 146

Val Trp Gln Leu Glu Glu Ala Val Leu His Val
1 5 10

<210> 147
<211> 11
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<220>
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<400> 148

Val Tyr Glu Ala Asp His His Ile Leu His Leu
1 5 10

<210> 149

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 149

Val Tyr Glu Ala Asp His His Ile Leu Ala Leu
1 5 10

<210> 150

<211> 11

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<213> hepatitis C virus

<400> 150

Val Phe Glu Ala Asp His His Ile Leu His Leu
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<210> 151

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<400> 151

Val Tyr Glu Ser Asp His His Ile Leu His Leu
1 5 10

<210> 152

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<212> PRT

<213> hepatitis C virus

<400> 152

Val Phe Glu Glu Thr Met Ile Leu His Leu
1 5 10

<210> 153

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 153

Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu
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<210> 154

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 154

Val Tyr Glu Ala Asn Gly Met Ile Leu His Leu
1 5 10

<210> 155

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 155

Val Tyr Glu Ala Gly Asp Ile Ile Leu His Leu
1 5 10

<210> 156
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 156

Val Arg Glu Asp Asn His Leu Arg Cys Trp Met Ala Leu
1 5 10

<210> 157
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<212> PRT
<213> hepatitis C virus

<400> 157

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Met Ala Leu
1 5 10

<210> 158
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<213> hepatitis C virus

<400> 158

Ile Arg Glu Gly Asn Ile Ser Arg Cys Trp Val Leu Pro
1 5 10

<210> 159
<211> 13
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<213> hepatitis C virus

<400> 159

Glu Asn Ser Ser Gly Arg Phe His Cys Trp Ile Pro Ile
1 5 10

<210> 160
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<400> 160

Glu Arg Ser Gly Asn Arg Thr Phe Cys Trp Thr Ala Val
1 5 10

<210> 161
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<212> PRT
<213> hepatitis C virus

<400> 161

Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp Ile Pro Val
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<210> 162
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<213> hepatitis C virus

<400> 162

Glu Arg His Gln Asn Gln Ser Arg Cys Trp Ile Pro Val
1 5 10

<210> 163
<211> 13
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<400> 163

Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp Ile Pro Val
1 5 10

<210> 164
<211> 13
<212> PRT
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<400> 164

Glu Arg Glu Gly Asn Ser Ser Arg Cys Trp Ile Pro Val
1 5 10

<210> 165
<211> 13
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<213> hepatitis C virus

<400> 165

Val Arg Glu Gly Asn Gln Ser Arg Cys Trp Val Ala Leu
1 5 10

<210> 166
<211> 13
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<400> 166

Val Arg Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu
1 5 10

<210> 167
<211> 13
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<213> hepatitis C virus

<400> 167

Val Arg Val Gly Asn Gln Ser Ser Cys Trp Val Ala Leu
1 5 10

<210> 168

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 168

Val Arg Val Gly Asn Gln Ser Arg Cys Trp Val Ala Leu
1 5 10

<210> 169

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 169

Val Lys Glu Gly Asn His Ser Arg Cys Trp Val Ala Leu
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<210> 170

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 170

Val Lys Thr Gly Asn Thr Ser Arg Cys Trp Val Ala Leu
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<210> 171

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 171

Ile Lys Ala Gly Asn Glu Ser Arg Cys Trp Leu Pro Val
1 5 10

<210> 172

<211> 13

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<220>

<221> MISC_FEATURE

<222> (3)..(4)

<223> Xaa represents any amino acid

<400> 172

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<210> 173

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 173

Val Lys Thr Gly Asn Leu Thr Lys Cys Trp Leu Ser Ala
1 5 10

<210> 174

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 174

Val Arg Ser Gly Asn Thr Ser Arg Cys Trp Ile Pro Val
1 5 10

<210> 175

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 175

Val Lys Asn Ala Ser Val Pro Thr Ala Ala
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<211> 10

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<213> hepatitis C virus

<400> 176

Val Lys Asp Ala Asn Val Pro Thr Ala Ala
1 5 10

<210> 177

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 177

Ala Arg Ile Ala Asn Ala Pro Ile Asp Glu
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<210> 178

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 178

Val Ser Lys Pro Gly Ala Leu Thr Lys Gly
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<210> 179

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 179

Val Ser Arg Pro Gly Ala Leu Thr Arg Gly
1 5 10

<210> 180

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 180

Val Asn Gln Pro Gly Ala Leu Thr Arg Gly
1 5 10

<210> 181

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 181

Val Ser Gln Pro Gly Ala Leu Thr Arg Gly
1 5 10

<210> 182

<211> 10

<212> PRT
<213> hepatitis C virus

<400> 182

Val	Ser	Gln	Pro	Gly	Ala	Leu	Thr	Lys	Gly
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<210> 183
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<212> PRT
<213> hepatitis C virus

<400> 183

Val	Ser	Arg	Pro	Gly	Ala	Leu	Thr	Glu	Gly
1				5					10

<210> 184
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<212> PRT
<213> hepatitis C virus

<400> 184

Ala	Pro	Tyr	Ile	Gly	Ala	Pro	Leu	Glu	Ser
1				5					10

<210> 185
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<212> PRT
<213> hepatitis C virus

<400> 185

Ala	Pro	Tyr	Thr	Ala	Ala	Pro	Leu	Glu	Ser
1				5					10

<210> 186
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<212> PRT
<213> hepatitis C virus

<400> 186

Ala Pro Ile Leu Ser Ala Pro Leu Met Ser
1 5 10

<210> 187
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<400> 187

Val Pro Asn Ser Ser Val Pro Ile His Gly
1 5 10

<210> 188
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<213> hepatitis C virus

<400> 188

Val Pro Asn Ala Ser Thr Pro Val Thr Gly
1 5 10

<210> 189
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<400> 189

Val Gln Asn Ala Ser Val Ser Ile Arg Gly

1 5 10

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<213> hepatitis C virus

<400> 190

Val Lys Ser Pro Cys Ala Ala Thr Ala Ser
1 5 10

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<213> hepatitis C virus

<400> 191

Ser Pro Arg Met His His Thr Thr Gln Glu
1 5 10

<210> 192
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<400> 192

Ser Pro Arg Leu Tyr His Thr Thr Gln Glu
1 5 10

<210> 193
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<212> PRT
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<400> 193

Thr Ser Arg Arg His Trp Thr Val Gln Asp
1 5 10

<210> 194

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 194

Ala Pro Lys Arg His Tyr Phe Val Gln Glu
1 5 10

<210> 195

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 195

Ser Pro Gln Tyr His Thr Phe Val Gln Glu
1 5 10

<210> 196

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 196

Ser Pro Gln His His Asn Phe Ser Gln Asp
1 5 10

<210> 197

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 197

Ser Pro Gln His His Ile Phe Val Gln Asp
1 5 10

<210> 198

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 198

Ser Pro Glu His His His Phe Val Gln Asp
1 5 10

<210> 199

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 199

Arg Pro Arg Arg His Trp Thr Thr Gln Asp
1 5 10

<210> 200

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 200

Arg Pro Arg Arg His Trp Thr Ala Gln Asp
1 5 10

<210> 201

<211> 10

<212> PRT
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<400> 201

Gln Pro Arg Arg His Trp Thr Thr Gln Asp
1 5 10

<210> 202
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<212> PRT
<213> hepatitis C virus

<400> 202

Arg Pro Arg Arg His Trp Thr Thr Gln Glu
1 5 10

<210> 203
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<400> 203

Gln Pro Arg Arg His Trp Thr Val Gln Asp
1 5 10

<210> 204
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Arg Pro Lys Tyr His Gln Val Thr Gln Asp
1 5 10

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<400> 205

Arg Pro Arg Met His Gln Val Val Gln Glu
1 5 10

<210> 206
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<400> 206

Arg Pro Arg Met Tyr Glu Ile Ala Gln Asp
1 5 10

<210> 207
<211> 10
<212> PRT
<213> hepatitis C virus

<400> 207

Arg His Arg Gln His Trp Thr Val Gln Asp
1 5 10

<210> 208
<211> 957
<212> DNA
<213> hepatitis C virus

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ggccctagat tgggtgtgcg cgcgacgaga aagacttccg agcggtcgca acctcgaggt	180
agacgtcagc ctatcccca ggctcgtcgg cccgagggca ggacctgggc tcagcccggg	240
tacccttggc ccctctatgg caatgagggc tgcgggtggg cgggatggct cctgtctccc	300
cgtggctctc ggccctagctg gggccccaca gacccccggc gtaggtcgcg caatttggtt	360
aagggtcatcg atacccttac gtgcggcttc gccgacctca tggggtacat accgctcgtc	420
ggcgccccctc ttggaggcgc tgccagggcc ctggcgcatg gcgtccgggt tctggaagac	480
ggcgtgaact atgcaacagg gaaccttctt ggttgctctt tctctatctt ccttctggcc	540
ctgctctctt gcttgactgt gcccgcttcg gcctaccaag tgcgcaactc cacggggctt	600
taccacgtca ccaatgattg ccctaactcg agtattgtgt acgaggcggc cgatgccatc	660
ctgcacactc cgggggtgct cccttgcggt cgtgagggca acgcctcgag gtgttgggtg	720
gcgatgacct ctacggtggc caccagggat ggcaaactcc ccgcgacgca gcttcgacgt	780
cacatcgatc tgcttgtcgg gagcgccacc ctctgttcgg ccctctacgt gggggaccta	840
tgcgggtctg tctttcttgt cggccaactg ttcaccttct ctcccaggcg cactggacg	900
acgcaagggt gcaattgctc tatctatccc ggccatataa cgggtcaccg catggca	957

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 <212> DNA
 <213> hepatitis C virus

<400> 209	
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ggccccagggt tgggtgtgcg cgcgactagg aagacttccg agcggtcgca acctcgtgga	180
aggcgacaac ctatcccca ggctcgccgg cccgagggta ggacctgggc tcagcccggg	240
tacccttggc ccctctatgg caacgaggggt atgggggtggg caggatggct cctgtcacc	300
cgtggctctc ggccctagttg gggccccaca gacccccggc gtaggtcgcg taatttggtt	360
aagggtcatcg atacccttac atgcggcttc gccgacctca tggggtacat tccgcttgtc	420
ggcgcccccc tagggggcgc tgccagggcc ctggcacatg gtgtccgggt tctggaggac	480

ggcgtgaact atgcaacagg gaatctgccc ggttgctctt tctctatctt cctcttagct	540
ttgctgtctt gtttgaccat cccagcttcc gcttacgagg tgcgcaacgt gtccgggata	600
taccatgtca cgaacgactg ctccaactca agtattgtgt atgaggcagc ggacatgac	660
atgcacaccc ccgggtgctg gccctgctc cgggagagta atttctcccg ttgctgggta	720
gcgctcactc ccacgctcgc ggccaggaac agcagcatcc ccaccacgac aatacgacgc	780
cacgtcgatt tgctcgttgg ggcggtgct ctctgttccg ctatgtacgt tggggatctc	840
tgcggatccg tttttctcgt ctcccagctg ttcaccttct cacctcgccg gtatgagacg	900
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 <212> DNA
 <213> hepatitis C virus

<400> 210	
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ggccccagag tgggtgtgcg cgcgacgagg aagacttccg agcggtcgca acctcgcggg	180
aggcgtcagc ctattcccaa ggcccgcga cccgagggaa ggtcctgggc gcagccccgg	240
tacccttggc ccctctatgg caacgagggc tgtgggtggg cgggatggct cctgtcccc	300
cgcggctctc ggctagttg gggcccttct gacccccggc ggaggtcacg caatttgggt	360
aaggtcacg ataccctcac gtgtggcttc gccgacctca tggggtacat cccgctcgtc	420
ggcgtcctc tagggggcgc tgccagagct ctggcacatg gtgttagagt cctggaagac	480
ggcgtgaatt acgcaacagg gaacctcccc ggttgctctt tttctatctt cttgctcgct	540
cttctatcct gcctgacagt ccctgcttcg gccgtcggag tgcgcaactc ttcgggggtg	600
taccatgtca ccaatgattg cccaatgcg tccgttgtgt acgagacgga gaacctgac	660
atgcatctgc ccgggtgtgt gccctacgta cgcgagggca acgctcgag gtgttgggtc	720
tcccttagtc ccaccgtagc cgccagggat tcgcgcgtcc ccgtcagtga ggttcggcgt	780
cgtgtcgact cgattgtcgg ggccgctcgc ttctgttcgg ctatgtatgt aggggaccta	840
tgcggtcca tcttccttgt tggccagatc ttcaccttct ctcccaggca ccattggacg	900

acgcaagact gcaattgctc catctaccca ggccatgtga caggatcatcg aatggct 957

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<211> 957
<212> DNA
<213> hepatitis C virus

<400> 211
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ggccccaggt tgggtgtgcg cgcgacaagg aagacttcgg agcgggtcca gccacgtgga 180
aggcgccagc ccatccctaa ggatcggcgc tccactggca aatcctgggg aaaaccagga 240
taccctggc ccctatacgg gaatgagga ctcggtggg caggatggct cctgtcccc 300
cgaggttccc gtccctcttg gggcccctaat gacccccggc ataggtccc caacgtgggt 360
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tacatggtga ccaacgactg caccaatgat agcattacct ggcaactcca ggctgctgtc 660
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<210> 212
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 212
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ggccccaggt tgggtgtgcg cgcgacaagg aagacttctg agcgatccca gccgcgtgga	180
cgacgccagc ccatcccgaa agatcggcgc tccaccggca agtcctgggg aaagccagga	240
tatccttggc ccctgtacgg aaacgagggg tgcggtggg cgggttggt cctgtcccc	300
cgcgggtctc gtcctacttg gggccccacc gacccccggc atagatcacg caatttgggc	360
agagtcacg ataccattac gtgtggtttt gccgacctca tggggtacat ccctgtcggt	420
ggcggcccg ttggaggcgt cgccagagct ctggcacacg gtgttaggg cctggaggac	480
gggataaatt acgcaacagg gaatttaccg ggttgctctt tttctatctt ttgtcttgct	540
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tactacgcca ctaatgattg ctcaaacaac agcatcacct ggcagctcac tgacgcagtt	660
ctccatcttc ctggatgcgt cccatgtgag aatgataatg gcaccttgca ttgctggata	720
caagtaacac ccaacgtggc tgtgaaacac cgcgggtgcgc tcactcgtag cctgcgaaca	780
cacgtcgaca tgatcgtaat ggcagctacg gcctgctcgg ccttgatatgt gggagatgtg	840
tgcggggccc tgatgattct atcgcaggct ttcattggtat caccacaacg ccacaacttc	900
accaagagt gcaactgttc catctaccaa ggtcacatca ccggccatcg catggca	957

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 <212> DNA
 <213> hepatitis C virus

<400> 213	
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ggcccagat tgggtgtgcg cgcgacgagg aaaacttccg aacgggtccca gccacgtggg	180
aggcgccagc ccatccctaa agatcggcgc accactggca agtcctgggg aaggccagga	240
tacccttggc ccctgtatgg gaatgagggc ctcggtggg caggggtggct cctgtcccc	300
cgcggttctc gcccttcatt gggccccacc gacccccggc ataaatcgcg caacttgggt	360
aaggtcacg ataccctaac gtgcgggtttt gccgacctca tggggtacat acccgtcggt	420
ggcgctccc ttggcggcgt tgccagagcc ctgcgccatg gggtgaggg tctggaggac	480

gggataaatt atgcaacggg gaatttgccc ggttgctctt tctctatctt tctcttgccc	540
ctcttgctctt gcatctctgt gccagtttcc gccgtggagg tcaaggacac cggcgactcc	600
tacatgccga ccaacgattg ctccaactct agtatcgttt ggcagcttga aggagcagtg	660
cttcatactc ctggatgcgt cccttgtagag cgtaccgcca acgtctctcg atgttgggtg	720
ccggttgccc ccaatctcgc cataagtcaa cctggcgctc tactaaggg cctgcgagca	780
cacatcgata tcatcgatgt gtctgctacg gtctgttctg ccctttatgt gggggacgtg	840
tgtggcgcg c tgatgctggc cgctcaggtc gtcgctgtgt cgccacaaca ccatacgttt	900
gtccaggaat gcaactgttc catatacccg ggccgcatta cgggacaccg catggct	957

<210> 214
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 <212> DNA
 <213> hepatitis C virus

<400> 214 -	
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ggcccccggt tgggtgtgag cgcgacgagg aaaacttccg agcgggtcca gccacgtggg	180
aggcgccagc ccattcccaa agatcggcgc cccactggca agtcctgggg aaaaccagga	240
tacccttggc ccctgtacgg gaatgagggc ctcggctggg cagggtggct cctgtcccc	300
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ccggtttcgc ccaatatagc tgtgagccaa cctggtgcgc ttaccaaggg cctgcggacg	780
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tgtggcgcg t gatgttggc ttctcaagtc ttcacatct cgccccagca tcataagttt	900

gtccaggact gcaactgttc catataccca ggccacatca ctggacatcg gatggcg 957

<210> 215
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 215
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<210> 216
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 216

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<210> 217
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 217	
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gttcagcatt	gcaactgctc	actgtaccca	ggtcatgttt	caggtcatcg	gatggct	957

<210> 218
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 218	
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tgtggagccg tcttcttggt gggacaggct ttcaccttca gacctcgtca gcacaacacg	900
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<210> 219
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 219	
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ggcccacgat tgggtgtgcg cgcaactcgt aagacttcag agcggtcaca accccgcgga	180
cggcgacagc ctattcccaa ggcacgcccg agcggaggac ggtcctgggc gcagcctggg	240
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tgcggggccc tcttccttgt ggggcaggcc ttacattca ggcctcgtcg tcatacgact	900
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<210> 220
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 220

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cgtggctccc gccctagttg gggcccaaatt gacccccggc gtagatcacg caacttgggt	360
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<210> 221

<211> 957

<212> DNA

<213> hepatitis C virus

<400> 221

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 gggattaact atgcaacagg gaatcttccc ggttgctctt tctctatctt ccttttggca 540
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<210> 222
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 222
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<210> 223
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 223
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<210> 224
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 224

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<210> 225

<211> 957

<212> DNA

<213> hepatitis C virus

<400> 225

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<210> 226
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 226
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<210> 227
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 227
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 ggcgcgcctt tgggcggcgt cgcggctgcy ctcgcatatg gcgtgagggc aatcgaggac 480
 gggatcaatt atgcaacagg gaatctcccc ggttgctctt tctctatctt ccttttggca 540
 ctactctcgt gcctcacaac gccagcttcg gctcttacct acggcaactc cagtgggcta 600
 taccatctca caaatgattg cccaactcc agcatcgtgc tggaggcgga tgctatgatc 660
 ttgcatttgc ctggatgctt gccttgtgtg agggtcgatg atcgggtccac ctgttggcat 720
 gctgtgaccc ccaccctggc cataccaaat gcttcacgc ccgcaacggg attccgcagg 780
 catgtggatc ttcttgccgg cgccgcagtg gtttgctcat ccctgtacat cggggacctg 840
 tgtggctctc tctttttggc gggacaacta ttcaccttcc agccccgccg tcattggact 900
 gtgcaagact gcaactgctc catctataca ggccacgtca ccggccacag gatggct 957

<210> 228
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>

<221> misc_feature
<222> (383)..(383)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (387)..(387)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (924)..(924)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (928)..(928)
<223> n represents any nucleotide

<400> 228
atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa atactaaccg tcgccctatg 60
gacgtcaagt tcccgggcgg cgccagatc gttggtggag tttacttggt gccgcgcagg 120
ggccctcggt tgggtgtgcg cgcgacgaga aagacctccg aacgggtccca gcctagaggc 180
aggcgccagc ccataccaaa ggtacgccag ccgacaggcc gtagctgggg tcaacccggc 240
tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtccccc 300
cgcgggcttc gtcctaattg gggccccaac gacccccggc gaagggtccg caacttgggt 360
aaggtcatcg atacccttac atncggncta gccgacctca tggggtacat ccctgtccta 420
ggagggccgc ttggcggcgt tgcggctgcc ctggcgcatt gcgttagggc aatcgaggac 480
ggggtcaatt acgcaacagg gaatcttcct ggttgctcct tttctatctt cctcttagca 540
ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggatt 600
taccatctta ccaatgactg ctccaacaac agcatcggtt ttgaggcgga gaccatgata 660
ctgcatcttc caggtttgtt cccatgtatc aaggcgggga atgagtcacg atgttggtc 720
cctgtctccc ccaccttagc cgtccccaac tcatcagtgc caatccacgg gtttcgccga 780

cacgtagacc tcctcgttgg ggcagcggca tttgttcgg ccatgtacat cggagacctc 840
 tgtggttagca taatcttggg agggcagctt tttactttca ggcctaagta ccatcaggtt 900
 acccaggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 229
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<400> 229

Met Ser Thr Asn Pro Lys Pro Gln Lys Lys Asn Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
 130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

BEST AVAILABLE COPY

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr
180 185 190

Gln Val Arg Asn Ser Thr Gly Leu Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Ala Ile Leu His Thr Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Ala Ser Arg Cys Trp Val
225 230 235 240

Ala Met Thr Pro Thr Val Ala Thr Arg Asp Gly Lys Leu Pro Ala Thr
245 250 255

Gln Leu Arg Arg His Ile Asp Leu Leu Val Gly Ser Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg His Trp Thr Thr Gln Gly Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 230

<211> 319

<212> PRT

<213> hepatitis C virus

<400> 230

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

20

25

30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
 130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr
 180 185 190

Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys Ser
 195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro
 210 215 220

Gly Cys Val Pro Cys Val Arg Glu Ser Asn Phe Ser Arg Cys Trp Val
 225 230 235 240

Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ser Ser Ile Pro Thr Thr
 245 250 255

Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Leu Cys
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg Tyr Glu Thr Val Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala
305 310 315

<210> 231
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 231

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Val Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

Gly Val Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Thr Pro Val Ser Ala Ala
 180 185 190

Glu Val Lys Asn Ile Ser Thr Gly Tyr Met Val Thr Asn Asp Cys Thr
 195 200 205

Asn Asp Ser Ile Thr Trp Gln Leu Gln Ala Ala Val Leu His Val Pro
 210 215 220

Gly Cys Val Pro Cys Glu Lys Val Gly Asn Thr Ser Arg Cys Trp Ile
 225 230 235 240

Pro Val Ser Pro Asn Val Ala Val Gln Gln Pro Gly Ala Leu Thr Gln
 245 250 255

Gly Leu Arg Thr His Ile Asp Met Val Val Met Ser Ala Thr Leu Cys
 260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Met Leu Ala Ala
 275 280 285

Gln Met Phe Ile Val Ser Pro Gln His His Trp Phe Val Gln Asp Cys
 290 295 300

Asn Cys Ser Ile Tyr Pro Gly Thr Ile Thr Gly His Arg Met Ala
 305 310 315

<210> 232

<211> 319

<212> PRT

<213> hepatitis C virus

BEST AVAILABLE COPY

<400> 232

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Thr Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Arg Val Ile Asp Thr Ile Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala Val
180 185 190

Glu Val Arg Asn Ile Ser Ser Ser Tyr Tyr Ala Thr Asn Asp Cys Ser
195 200 205

BEST AVAILABLE COPY

Asn Asn Ser Ile Thr Trp Gln Leu Thr Asp Ala Val Leu His Leu Pro
 210 215 220

Gly Cys Val Pro Cys Glu Asn Asp Asn Gly Thr Leu His Cys Trp Ile
 225 230 235 240

Gln Val Thr Pro Asn Val Ala Val Lys His Arg Gly Ala Leu Thr Arg
 245 250 255

Ser Leu Arg Thr His Val Asp Met Ile Val Met Ala Ala Thr Ala Cys
 260 265 270

Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile Leu Ser
 275 280 285

Gln Ala Phe Met Val Ser Pro Gln Arg His Asn Phe Thr Gln Glu Cys
 290 295 300

Asn Cys Ser Ile Tyr Gln Gly His Ile Thr Gly His Arg Met Ala
 305 310 315

<210> 233
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (319)..(319)
 <223> Xaa represents any amino acid

<400> 233

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

BEST AVAILABLE COPY

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Ser Ala Leu Leu Ser Cys Ile Ser Val Pro Val Ser Ala Val
180 185 190

Glu Val Lys Asn Thr Ser Thr Ser Tyr Met Val Thr Asn Asp Cys Ser
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr Pro
210 215 220

Gly Cys Val Pro Cys Glu Gln Ile Gly Asn Ala Ser Arg Cys Trp Val
225 230 235 240

Pro Val Ser Pro Asn Val Ala Ile Arg Gln Pro Gly Thr Leu Thr Lys
245 250 255

Gly Leu Arg Ala His Val Asp Val Ile Val Met Ser Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Ile Ala Ala
 275 280 285

Gln Ala Val Ile Ala Ser Pro Gln Arg His Thr Phe Val Gln Glu Cys
 290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa
 305 310 315

<210> 234
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<400> 234

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Asp Arg Arg Pro Thr Gly Lys Ser Trp Gly Lys Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
 100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val

BEST AVAILABLE COPY

130

135

140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Gly Leu
180 185 190

Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val Thr Asn Asp Cys Gln
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro
210 215 220

Gly Cys Val Pro Cys Glu Glu Lys Gly Asn Ile Ser Arg Cys Trp Ile
225 230 235 240

Pro Val Ser Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Leu Thr Lys
245 250 255

Gly Leu Arg Thr His Ile Asp Thr Ile Ile Ala Ser Ala Thr Phe Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Leu Ala Ser
275 280 285

Gln Val Phe Ile Ile Ser Pro Gln His His Lys Phe Val Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 235

<211> 419

<212> PRT

<213> hepatitis C virus

<400> 235

Met Ser Thr Leu Pro Lys Pro Gln Arg Gln Thr Lys Arg Asn Thr Leu
1 5 10 15

Arg Arg Pro Gln Asn Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Val Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Lys Gln Arg His Leu
50 55 60

Ile Pro Lys Ala Arg Ser Arg Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Lys Gly Cys Gly Leu Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Phe Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Leu Gly Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Phe Ser Cys Leu Thr Cys Pro Ala Ser Gly Leu
180 185 190

Glu Tyr Thr Asn Thr Ser Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser
195 200 205

Asn Gly Ser Ile Val Tyr Glu Ala Glu Asp Val Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Thr Thr Gly Asn Gln Ser Ser Cys Trp Thr
225 230 235 240

Thr Val Ser Thr Thr Val Ala Val Arg Thr Leu Gly Val Thr Thr Ala
245 250 255

Ser Ile Arg Thr His Val Asp Met Leu Val Gly Ala Arg Gln Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Phe Gly Ala Val Phe Leu Val Gly
275 280 285

Gln Ala Phe Thr Phe Arg Pro Arg Arg His Thr Thr Val Gln Thr Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala Trp
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ile Gly Leu Val Ile Ser His
325 330 335

Leu Met Arg Leu Pro Gln Thr Leu Phe Asp Leu Val Ser Gly Thr His
340 345 350

Trp Gly Val Met Ala Gly Leu Ala Tyr Phe Ser Met Gln Gly Asn Trp
355 360 365

Ala Lys Val Val Ile Val Leu Ile Met Phe Ser Gly Val Asp Ala Asn
370 375 380

Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu Thr
385 390 395 400

Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val Asn Ser
405 410 415

Asn Gly Ser

<210> 236
<211> 383
<212> PRT
<213> hepatitis C virus

<400> 236

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Leu Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Leu Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr
180 185 190

Asn Tyr Arg Asn Ser Ser Gly Val Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Thr Asp Tyr His Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Lys Ser Thr Cys Trp Val
225 230 235 240

Ser Leu Thr Pro Thr Val Ala Ala Gln His Leu Asn Ala Pro Leu Glu
245 250 255

Ser Leu Arg Arg His Val Asp Leu Met Val Gly Gly Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Gly Val Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala Trp
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ala Thr Leu Val Leu Ala Gln
325 330 335

Leu Met Arg Ile Pro Gly Ala Met Val Asp Leu Leu Ala Gly Gly His
340 345 350

Trp Gly Ile Leu Val Gly Ile Ala Tyr Phe Ser Met Gln Ala Asn Trp
355 360 365

Ala Lys Val Ile Leu Val Leu Phe Leu Phe Ala Gly Val Asp Ala
370 375 380

<210> 237
<211> 319
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (102)..(102)
<223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (105)..(105)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (114)..(114)
 <223> Xaa represents any amino acid

<400> 237

Met	Ser	Thr	Asn	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Asn
1				5					10					15	

Arg	Arg	Pro	Met	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		

Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala
		35					40					45			

Thr	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro
	50					55					60				

Ile	Pro	Lys	Ala	Arg	Arg	Thr	Glu	Gly	Arg	Ser	Trp	Ala	Gln	Pro	Gly
65					70					75					80

Tyr	Pro	Trp	Pro	Leu	Tyr	Gly	Asn	Glu	Gly	Cys	Gly	Trp	Ala	Gly	Trp
				85					90					95	

Leu	Leu	Ser	Pro	Arg	Xaa	Ser	Arg	Xaa	Ser	Trp	Gly	Pro	Asn	Asp	Pro
			100					105						110	

Arg	Xaa	Arg	Ser	Arg	Asn	Leu	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys
		115					120					125			

Gly	Phe	Ala	Asp	Leu	Met	Gly	Tyr	Ile	Pro	Leu	Val	Gly	Ala	Pro	Val
	130					135					140				

Gly	Gly	Val	Ala	Arg	Ala	Leu	Ala	His	Gly	Val	Arg	Ala	Val	Glu	Asp
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser Ala Val
180 185 190

Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys Pro
195 200 205

Asn Ala Ser Ile Val Tyr Glu Thr Glu Asn His Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp Val
225 230 235 240

Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Ala Gly Ala Pro Leu Glu
245 250 255

Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Met Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 238
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 238

Met Ser Thr Asn Pro Lys Leu Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Gly Val
180 185 190

Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp Cys Pro
195 200 205

Asn Ala Ser Ile Val Tyr Glu Thr Asp Asn His Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val
225 230 235 240

Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Val Gly Ala Pro Leu Glu
245 250 255

Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 239
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 239

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro
210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val
225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala
245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala
305 310 315

<210> 240

<211> 383

<212> PRT
<213> hepatitis C virus

<400> 240

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Gln Gly Arg His Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro His Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu
180 185 190

Thr Tyr Gly Asn Ser Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro

195	200	205
Asn Ser Ser Ile Val Leu Glu Ala Asp Ala Met Ile Leu His Leu Pro 210 215 220		
Gly Cys Leu Pro Cys Val Arg Val Asp Asp Arg Ser Thr Cys Trp His 225 230 235 240		
Ala Val Thr Pro Thr Leu Ala Ile Pro Asn Ala Ser Thr Pro Ala Thr 245 250 255		
Gly Phe Arg Arg His Val Asp Leu Leu Ala Gly Ala Ala Val Val Cys 260 265 270		
Ser Ser Leu Tyr Ile Gly Asp Leu Cys Gly Ser Leu Phe Leu Ala Gly 275 280 285		
Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp Cys 290 295 300		
Asn Cys Ser Ile Tyr Thr Gly His Val Thr Gly His Arg Met Ala Trp 305 310 315 320		
Asp Met Met Met Asn Trp Ser Pro Thr Thr Thr Leu Val Leu Ser Ser 325 330 335		
Ile Leu Arg Val Pro Glu Ile Cys Ala Ser Val Ile Phe Gly Gly His 340 345 350		
Trp Gly Ile Leu Leu Ala Val Ala Tyr Phe Gly Met Ala Gly Asn Trp 355 360 365		
Leu Lys Val Leu Ala Val Leu Phe Leu Phe Ala Gly Val Glu Ala 370 375 380		

<210> 241
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 241

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Glu His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Ser Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Tyr His Ile Leu His
85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met
180 185 190

Ala

<210> 242

<211> 193

<212> PRT

<213> hepatitis C virus

<400> 242

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Leu Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Phe Glu Ala Val His His Ile Leu His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Leu Ala Ala Pro Tyr Leu Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ile Phe Leu
145 150 155 160

Ala Gly Gln Met Phe Thr Phe Arg Pro Arg Leu His Trp Thr Thr Gln
165 170 175

Glu Cys Asn Cys Ser Thr Tyr Pro Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 243
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 243

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg Met
 180 185 190

Ala

<210> 244
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 244

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Val Leu Leu Ser Arg Leu Thr Val Pro Ala Ser
 50 55 60

Ala Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys
 100 105 110

Trp Ile Pro Leu Thr Pro Thr Val Ala Val Pro Tyr Leu Gly Ala Pro
 115 120 125

Leu Thr Ser Val Arg Gln His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp His Cys Gly Gly Val Phe Leu
 145 150 155 160

Ala Gly Gln Met Val Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 245
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (120)..(120)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (134)..(134)
<223> Xaa represents any amino acid

<400> 245

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser
1 5 10 15

Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 246
<211> 119
<212> PRT
<213> hepatitis C virus

<400> 246

Tyr His Ile Thr Asn Asp Cys Pro Asn Ser Ser Val Val Tyr Glu Thr
1 5 10 15

Asp His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val Arg Thr
20 25 30

Gly Asn Val Ser Arg Cys Trp Thr Pro Val Thr Pro Thr Val Ala Ala
35 40 45

Val Ser Val Asp Ala Pro Leu Glu Ser Phe Arg Arg His Val Asp Leu
50 55 60

Met Val Gly Ala Ala Thr Leu Cys Ser Val Leu Tyr Val Gly Asp Leu
65 70 75 80

Cys Gly Gly Ala Phe Leu Val Gly Gln Met Phe Thr Phe Gln Pro Arg
85 90 95

Arg His Trp Thr Thr Gln Asp Cys Asn Cys Ser Ile Tyr Thr Gly His
100 105 110

Ile Thr Gly His Arg Met Ala
115

<210> 247
<211> 94
<212> PRT
<213> hepatitis C virus

<400> 247

Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile Arg Arg Pro Gln Asp Val
1 5 10 15

Lys Phe Pro Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Val Leu Pro
20 25 30

Arg Arg Gly Pro Arg Leu Gly Val Cys Ala Thr Arg Lys Thr Ser Glu
35 40 45

Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg
50 55 60

Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr
65 70 75 80

Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp Leu Leu Ser Pro
85 90

<210> 248
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 248

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro
100

<210> 249
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 249

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro
100

<210> 250
<211> 68
<212> PRT
<213> hepatitis C virus

<400> 250

Thr Asn Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val
20 25 30

Arg Ala Thr Gly Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
50 55 60

Pro Gly Phe Pro
65

<210> 251
<211> 80
<212> PRT
<213> hepatitis C virus

<400> 251

Lys Thr Lys Arg Asn Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro
1 5 10 15

Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly
20 25 30

Pro Arg Leu Gly Val Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln
35 40 45

Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly
50 55 60

Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Asn Glu
65 70 75 80

<210> 252

<211> 74

<212> PRT

<213> hepatitis C virus

<400> 252

Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val
20 25 30

Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
50 55 60

Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Lys
65 70

<210> 253
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 253

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Ala Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro
100

<210> 254
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 254

Val Glu Val Lys Asp Thr Gly Asp Ser Tyr Met Pro Thr Asn Asp Cys
1 5 10 15

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr
20 25 30

Pro Gly Cys Val Pro Cys Glu Arg Thr Ala Asn Val Ser Arg Cys Trp
35 40 45

Val Pro Val Ala Pro Asn Leu Ala Ile Ser Gln Pro Gly Ala Leu Thr
50 55 60

Lys Gly Leu Arg Ala His Ile Asp Ile Ile Val Met Ser Ala Thr Val
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Leu Ala
85 90 95

Ala Gln Val Val Val Val Ser Pro Gln His His Thr Phe Val Gln Glu
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly Arg Ile Thr Gly His Arg Met Ala
115 120 125

<210> 255
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 255

Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu Thr Asn Asp Cys
1 5 10 15

Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val Ile Leu His Thr
20 25 30

Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr Ser Thr Cys Trp
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val Gly Ala Thr Thr
50 55 60

Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly Ala Ala Thr Met
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala Val Phe Leu Val

85

90

95

Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln Thr Val Gln Thr
 100 105 110

Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly His Arg Met Ala
 115 120 125

<210> 256
 <211> 128
 <212> PRT
 <213> hepatitis C virus

<400> 256

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
 1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
 20 25 30

Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Thr Ser Arg Cys Trp
 35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Ala His Pro Gly Ala Pro Leu
 50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Met
 85 90 95

Gly Gln Met Ile Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu
 100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
 115 120 125

<210> 257
 <211> 128

<212> PRT
<213> hepatitis C virus

<400> 257

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys Trp
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro Leu
50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val
65 70 75 80

Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
85 90 95

Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
115 120 125

<210> 258
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 258

Val His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Thr Ser Ile Val Tyr Glu Thr Glu His His Ile Met His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Glu Asn Thr Ser Arg Cys Trp
35 40 45

Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Pro Asn Ala Pro Leu
50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Met
65 70 75 80

Cys Ser Ala Phe Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Leu Phe Asp Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala
115 120 125

<210> 259
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 259

Ile His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
35 40 45

Val Ala Leu Ser Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Val
50 55 60

Glu Ser Phe Arg Arg His Val Asp Met Met Val Gly Ala Ala Thr Val
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Gly Met Ala
115 120 125

<210> 260
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 260

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His Leu
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
35 40 45

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
50 55 60

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Ala
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met Ala
115 120 125

<210> 261

<211> 169
<212> PRT
<213> hepatitis C virus

<400> 261

Leu Ala His Gly Val Arg Ala Val Glu Asp Gly Ile Asn Tyr Ala Thr
1 5 10 15

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Leu
20 25 30

Ser Cys Leu Thr Val Pro Ala Ser Ala Val His Tyr His Asn Thr Ser
35 40 45

Gly Ile Tyr His Leu Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Phe
50 55 60

Glu Ala Val His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val
65 70 75 80

Arg Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu
85 90 95

Ala Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser Met Arg Arg His Val
100 105 110

Asp Leu Met Val Gly Thr Ala Thr Leu Cys Ser Ala Leu Tyr Val Gly
115 120 125

Asp Leu Cys Gly Gly Ile Phe Leu Ala Gly Gln Met Phe Thr Phe Arg
130 135 140

Pro Arg Leu His Trp Thr Thr Gln Glu Cys Asn Cys Ser Thr Tyr Pro
145 150 155 160

Gly His Ile Thr Gly His Arg Met Ala
165

<210> 262
<211> 128
<212> PRT

<213> hepatitis C virus

<400> 262

Val His Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Phe Glu Ala Glu His His Ile Leu His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp
35 40 45

Ile Ala Leu Thr Pro Thr Leu Ala Ala Pro His Ile Gly Ala Pro Leu
50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr Leu
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ile Phe Leu Val
85 90 95

Gly Gln Met Phe Asn Phe Arg Pro Arg Leu His Trp Thr Thr Gln Glu
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
115 120 125

<210> 263

<211> 128

<212> PRT

<213> hepatitis C virus

<400> 263

Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His Ala
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys Trp
 35 40 45

Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val Thr
 50 55 60

Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala Leu
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val
 85 90 95

Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asp
 100 105 110

Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met Ala
 115 120 125

<210> 264
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 264
 ctccacagtc actgagagcg acatccgtac ggaggaggca atctaccaat gttgtgacct 60
 cgacccccaa gcccgcgtgg ccatcaagtc cctcaccgag aggctttatg ttgggggccc 120
 tcttaccaat tcaagggggg agaactgcgg ctatcgagg tgccgcgcga gcggcgact 180
 gacaactagc tgtggttaaca ccctcacttg ctacatcaag gcccgggcag cctgtcgagc 240
 cgcagggctc caggactgca ccatgctcgt gtgtggcgac gacttagtcg ttatctgtga 300
 aagcgcgggg gtccaggagg acgcggcgag cctgagagcc 340

<210> 265
 <211> 340
 <212> DNA
 <213> hepatitis C virus

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<400> 265
ctcaacggtc actgagaatg acatccgtac tgaggaatca atttaccaat gttgtgactt      60
ggcccccgaa gccaggcagg ccataaggtc gctcacagag cggctttatg tcgggggtcc      120
cctgactaat tcgaaggggc agaactgcgg ttatcgccgg tgccgcgcaa gtggcgtgct      180
gacgactagc tgcggaaca ccctcacatg ttacttgaag gccactgcgg cctgtcgagc      240
tgcaaagctc caggactgca cgatgctcgt gaacggagac gaccttgctg ttatctgtga      300
gagtgcggga acccaggagg atgcggcggc cctacgagcc      340

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<210> 266
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(1)
<223> n represents any nucleotide

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<400> 266
ntcaacagtc accgagaacg acatccgtgt tgaggagtca atttaccaat gttgtgactt      60
ggcccccgag gccagacagg ccataaagtc gctcacagag cggctttata tcgggggtcc      120
cctgactaat tcaaaggggc agaactgtgg ctatcgccga tgccgcgcaa gcggcgtgct      180
gacgaccagc tgcggaata cccttacatg ttacctaaag gcctctgcag cctgtcgagc      240
tgcaagctc caggactgca cgatgctcgt gtgcggggac gaccttgctg ttatctgtga      300
aagcgcgga acccaagagg acgcggcgag cctacgagtc      340

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<210> 267
<211> 340
<212> DNA
<213> hepatitis C virus

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<400> 267
ctcaaccgtc actgagagag acatcaggac tgaggagtcc atatatcggg cttgttcctt      60
gcccaggagg gccacactg ccatacactc actgactgag agactttacg tgggagggcc      120

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catgttcaac agcaagggcc agacctgcgg gtacaggcgt tgccgcgcca gcggggtgct	180
taccactagc atggggaaca ccatcacatg ctatgtgaaa gccttagcgg cctgtaaggc	240
tgcagggata attgcgcca caatgctggt atgcggcgat gacttggttg tcatctcaga	300
gagccagggg accgaggagg acgagcggaa cctgagagcc	340

<210> 268
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 268	
ctcaaccgtc acggagaggg acataagaac agaagaatcc atatatcagg cttgttctct	60
gcctcaagaa gccagaactg tcatacactc gctcactgag agactttacg taggagggcc	120
catgacaaac agcaaagggc aatcctgcgg ctacaggcgt tgccgcgcaa gcggtgtttt	180
caccaccagc atggggaata ccatgacatg ttacatcaaa gcccttgag cgtgtaaggc	240
tgcagggatc gtggaccctg ttatgttggt gtgtggagac gacctggtcg tcatctcaga	300
gagccaaggt aacgaggagg acgagcggaa cctgagagct	340

<210> 269
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 269	
ctcaactgtc actgaacagg acatcagggt ggaagaggag atataccaat gctgtaacct	60
tgaaccggag gccaggagag tgatctcctc cctcacggag cggctttact gcgggggccc	120
tatgttcaac agcaaggggg cccaatgtgg ttatcgccgg tgccgtgcca gtggagtcct	180
gcctaccagc ttcggcaaca caatcacttg ttacatcaag gccacagcgg ctgcgaaggc	240
cgcaggcctc cggaaccggg actttcttgt ctgcggagat gatctggtcg tagtggctga	300
gagcgatggc gtcgatgagg atagagcagc cctgagagcc	340

<210> 270
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 270
ctctactgtc actgaacatg acatcaggac ggaggaggag atataccaat gctgtgacct 60
tgagccagag gctcggaagg cgatcagcgc tctcacagag cggctgtaca tcggaggtcc 120
catgtacaac agtaaggggc tccagtgcgg ctatcgccgc tgccgcgcca gcggcgtctt 180
gcctaccagc ttcggcaata caataacctg ttacatcaag gccactgcag ccagcagggc 240
tgcggtctc aaagacccat ctttccttgt ctgcggagac gatttggtgg ttgtatctga 300
aagctgcggc gtcgaggagg acagagcagc tctgcgagcc 340

<210> 271
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 271
ctccactgta accgaaaagg acatcagggc cgaggaggag gtctatcagt gttgtgacct 60
ggagcccga gcccgcaagg caattaccgc cctaacagag agactctacg tgggcgggtcc 120
catgcataac agcaaggagg acctgtgcgg gtatcgaga tgctcgcaa gcggcgtcta 180
caccaccagc ttcgggaaca cactgacgtg ctacctcaa gcctcagccg ctatcaaagc 240
ggcggggctg agagactgca ccatgttggc ctgtggtgat gacctggttgc tcatcgctga 300
gagcgatggc gtagaggagg acaaacgacc cctcggagcc 340

<210> 272
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 272
ctccactgta accgaaaagg acatcagggc cgaggaggag gtatatcagt gttgtgacct 60

ggagcccgag gcccgagag caattaccgc cctaacagag agactctacg tgggcggtcc	120
catgcataac agcaggggag acctgtgcgg gtatcgaga tgccgtgcga gcggcgctcta	180
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ctatcagagc	240
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtcg tcattgctga	300
aagcgatggc gtagaggagg acaaacgagc cctcggagcc	340

<210> 273
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 273	
ctccactgta accgaaaag acatcagggc cgaggaggag gtatatcagt gttgtgacct	60
ggagcccgaa gcccgcaagg taattaccgc cctaacagag agactctatg tgggcggtcc	120
catgcataat agcaaaggag acctgtgcgg gtatcgaga tgccgcgcaa gcggcgctcta	180
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ccatcagggc	240
gtcagggctg agagactgca ctatgctggt ctatggtgac gacctggtcg tcattgccga	300
gagcgatggc gtagaggagg acaaacgagc cctcggagtc	340

<210> 274
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 274	
ctccactgta accgaaaag acatcagggc cgaggaggag gtgtatcagt gttgtgacct	60
ggagcccgag gcccgcaagg caattactgc cctaacagag agactctatg tgggcggtcc	120
catgcataac agcaagggag acctgtgtgg gtatcgaga tgccgcgcaa gcggcgctcta	180
caccaccagc ttcgggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcagagc	240
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtcg tcatcgctga	300
gagcgatggc gttgaggagg acaaacgagc cctcggagcc	340

<210> 275
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (329)..(329)
<223> n represents any nucleotide

<400> 275
ctccactgtg actgagagag acatcaaggt cgaagaagaa gtctatcagt gttgtgatct 60
ggagcccagag gcccgcaagg taatagccgc cctcacggag agactctacg tgggcggccc 120
catgcataac agcaagggag acctttgcgg gtatcgtaga tgccgcgcga gcggcgata 180
caccaccagc ttcgggaaca caatgacgtg ctaccttaag gcctcagcag ccatcagggc 240
tgcggggcta aaggattgca ccatgctggt ttgcggtgac gacctagtcg tgatcgccga 300
gagcgggtggc gttgaggagg acaaacganc cctcggagct 340

<210> 276
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 276
ctccacgggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60
ggagcccgaag gcccgcaagg tgatatccgc cctaacggaa agactctacg tgggcgggtcc 120
catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcgggggtcta 180
caccaccagc ttcgggaaca ctgtaacgtg ttatctcaag gccgttgcgg ctactagggc 240
cgcaggtctg aaagggttgca gcatgctggt ttgtggagac gacttagtcg tcatctgcga 300
gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 277
<211> 340
<212> DNA

<213> hepatitis C virus

<400> 277

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ctcgaccggtt accgaacatg acataatgac tgaagagtct atttaccaat cattgtactt      60
gcagcctgag gcgcgtgtgg caatacggtc actcacccaa cgctgtact gtggaggccc      120
catgtataac agcaaggggc aacaatgtgg ttatcgtaga tgccgcgcca gcggcgtctt      180
caccactagt atgggcaaca ccatgacgtg ctacattaag gctttagcct cctgtagagc      240
cgcaaagctc caggactgca cgctcctggg gtgtggtgat gatcttgtgg ccatttgcca      300
gagccagggg acgcacgagg ataaagcgag cctgagagcc      340
```

<210> 278

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 278

```
Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile Tyr Gln
1          5          10          15
```

```
Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile Lys Ser Leu Thr
20          25          30
```

```
Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Arg Gly Glu Asn
35          40          45
```

```
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50          55          60
```

```
Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala
65          70          75          80
```

```
Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85          90          95
```

```
Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Leu Arg
100         105         110
```

Ala

<210> 279
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 279

Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala Ala Leu Arg
100 105 110

Ala

<210> 280
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 280

Ile Tyr Gln Cys Cys Asp Leu His Pro Asp Ala Arg Ala Ala Ile Lys
1 5 10 15

Asn Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys
20 25 30

Gly Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr
35 40 45

Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala
50 55 60

Cys Arg Ala Ala Gly Leu Arg Asp Cys Thr
65 70

<210> 281

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 281

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Arg
1 5 10 15

Ala Cys Ser Leu Pro Glu Glu Ala His Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Gln Thr
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Ala

<210> 282
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 282

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ala Cys Ser Leu Pro Gln Glu Ala Arg Thr Val Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Asn Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Ala

<210> 283
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 283

Ile Tyr Gln Ser Cys Ser Leu Pro Glu Glu Ala Arg Thr Ala Ile His
1 5 10 15

Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys
20 25 30

Gly Gln Ser Cys Gly Tyr Arg Arg Cys Arg Ala Ser Ala Val Leu Thr
35 40 45

Thr Ser Met Gly Asn Thr Leu Thr Cys Tyr Val Lys Ala Arg Ala Ala
50 55 60

Cys Asn Ala Ala Gly Ile Val Ala Pro Thr
65 70

<210> 284

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 284

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Leu Asn Ser Lys Gly Gln Thr
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Gln Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val

85

90

95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
 100 105 110

Ala

<210> 285
 <211> 71
 <212> PRT
 <213> hepatitis C virus

<400> 285

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
 20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
 35 40 45

Arg Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
 50 55 60

Leu Val Val Val Ala Glu Ser
 65 70

<210> 286
 <211> 71
 <212> PRT
 <213> hepatitis C virus

<400> 286

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 287
<211> 71
<212> PRT
<213> hepatitis C virus

<400> 287

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 288
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 288

Ser Thr Val Thr Glu His Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Met Tyr Asn Ser Lys Gly Leu Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Ser Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Val Ser Glu Ser Cys Gly Val Glu Glu Asp Arg Ala Ala Leu Arg
100 105 110

Ala

<210> 289
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 289

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe

50

55

60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Lys Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Pro Leu Gly
100 105 110

Ala

<210> 290

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 290

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Ala

<210> 291
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 291

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ser Gly Leu Arg Asp Cys Thr Met Leu Val Tyr Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Val

<210> 292
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 292

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Ala

<210> 293

<211> 113

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (110)..(110)

<223> Xaa represents any amino acid

<400> 293

Ser Thr Val Thr Glu Arg Asp Ile Lys Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ala Ala Leu Thr

20

25

30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Xaa Leu Gly
 100 105 110

Ala

<210> 294

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 294

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Thr Arg Lys Val Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Phe Leu Lys Ala Thr Ala Ala Thr Lys Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Arg Arg Ala Leu Gly
100 105 110

Ala

<210> 295
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 295

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
100 105 110

Ala

<210> 296
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 296

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Lys Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Leu Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
100 105 110

Ala

<210> 297
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE

<222> (8)..(8)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (24)..(24)
<223> Xaa represents any amino acid

<400> 297

Pro Thr Val Thr Glu Arg Asp Xaa Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asn Leu Glu Xaa Asp Xaa Arg Lys Val Ile Asn Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Ile Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Ile Gly Ile Asp Glu Asp Lys Gln Ala Leu Arg
100 105 110

Thr

<210> 298
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE

<222> (4)..(4)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (109)..(109)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (111)..(111)
<223> Xaa represents any amino acid

<400> 298

Ser	Thr	Val	Xaa	Glu	Arg	Asp	Ile	Arg	Thr	Glu	Gly	Glu	Val	Tyr	Gln
1				5					10					15	

Cys	Cys	Asp	Leu	Glu	Pro	Glu	Ala	Arg	Lys	Val	Ile	Thr	Ala	Leu	Thr
			20					25					30		

Glu	Arg	Leu	Tyr	Val	Gly	Gly	Pro	Met	Phe	Asn	Ser	Lys	Gly	Asp	Leu
		35					40					45			

Cys	Gly	Gln	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Phe
	50					55					60				

Gly	Asn	Thr	Leu	Thr	Cys	Tyr	Leu	Lys	Ala	Thr	Ala	Ala	Thr	Arg	Ala
65					70					75				80	

Ala	Gly	Leu	Lys	Asp	Cys	Thr	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
				85					90					95	

Val	Ile	Ser	Glu	Ser	Ala	Gly	Val	Glu	Glu	Asp	Pro	Xaa	Thr	Xaa	Arg
			100					105					110		

Pro

<210> 299
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 299

Val Tyr Gln Cys Cys Asn Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr
1 5 10 15

Ala Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys
20 25 30

Gly Asp Leu Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr
35 40 45

Thr Ser Phe Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala
50 55 60

Ile Arg Ala Ala Gly Leu Arg Asp Cys Thr
65 70

<210> 300
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 300

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Cys Asp Leu Gln Pro Glu Ala Arg Ala Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala
65 70 75 80

Ala Arg Leu Arg Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Ser Leu Arg
100 105 110

Ala

<210> 301
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 301

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Leu Tyr Leu Gln Pro Glu Ala Arg Val Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Lys Ala Ser Leu Arg
100 105 110

Ala

<210> 302
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 302

Ser Ala Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg Val
1 5 10